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Leasing and Financial Statements

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# the Accounting Review

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OCTOBER, 1958

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# The Accounting Review

VOL. XXXIII

OCTOBER, 1958

NO. 4

## ACCOUNTING RESEARCH\*

ALVIN R. JENNINGS

*President, American Institute of Certified Public Accountants*

THERE IS, I think, widespread acceptance of the proposition that accounting is utilitarian in character. In this sense, it is like the law. Both must be kept responsive to the needs of changing times and both disciplines must be susceptible of making the accommodations required to keep in harmony with significant social and economic goals. It follows that the body of principles which is created to implement accounting must be widely understood and accepted as valid or the end product will be of limited value. It follows, too, that it is not enough for a principle to achieve acceptance—it must continue to merit acceptance or yield to another more compatible with the needs.

During the past few years, with increasing frequency, well informed people, both within and without the profession, have questioned whether accounting has in fact kept abreast of the times. The late Marquis G. Eaton in an address delivered last Spring discussed Financial Reporting In A Changing Society. His paper identified important and pressing problems. Oswald W. Knauth, business executive and economist, in his article which appeared in the January 1957 *Journal of Accountancy* has given us a stimulating external point of

view of limitations on the usefulness of financial reports growing out of lack of comparability. George O. May whose career has spanned more than 60 years of professional developments and who through most of that period was closely associated with the progress of accounting thinking, on numerous occasions has stressed the critical need for recognition that accounting philosophies suffer from obsolescence. Among the significant social and economic changes which Mr. May believes require reorientation in existing modes of accounting thinking are:

1. the adoption of the full employment theory which was enacted into law in 1946;
2. the great acceleration in the rate of change in the industrial economy since 1940; and
3. the social revolution which has occurred since 1940 and which is rooted in the adoption of a political philosophy dedicated to the lessening of inequalities of wealth and income.

There is, I think, much merit in this point of view.

Clearly, the time is at hand for critical reappraisal of the continued validity of the basic objectives of accounting and the methods upon which we rely to identify the correlative, postulates, assumptions or conventions which may best serve our purposes.

One of the techniques in which we, as accountants, have been carefully trained is

\* This paper was presented at the Annual Meeting of the American Accounting Association, Syracuse University, on August 26, 1958.

that of analysis. We use it liberally as a method of searching for sound conclusions. This morning I am going to ask you to join me in some self-analysis of an introspective nature. My specific interest today is in accounting principles. What is their nature? What purpose do they serve? How do they come into being? Are they immutable? If not, how do useful changes come about? These are some of the questions which I would like to consider with you and, since we haven't much time, we can't go into any of them deeply enough to reach supportable and valid conclusions. That doesn't bother me and I hope it doesn't bother you. It is unrealistic to expect that all thinking should result in decisions. The most I think we can hope for is that it will make a contribution to that end. Often an understanding of why we can't presently reach conclusions is the key to further progress.

#### *Accounting—Art or Science?*

Principles give meaning to accounting. To better understand why, let us spend a minute or two thinking about accounting as such. It has been described by some as an art—by others as a science. The question of classification of itself has limited meaning. Of more interest are certain apparent distinctions between the characteristics of accounting, whether art or science, and those of certain branches of science such as the physical sciences.

The physical sciences are concerned with the study, observation and classification of phenomena. Their interest is in learning the natural characteristics of things and how and why they are as they are and most particularly in the establishment of verifiable general laws or principles. In lay language they work backward from the result to the principle or combination of principles which brought about the consequences. Once identified and defined, the principles are immutable and the only thing which brings about change is the

discovery of error in the original analysis. The inductive thinking and the hypotheses of the scientist involve the frequent use of standards of one sort or another and many of these have been arbitrarily established. Standards of measurement are examples. The units of measurement of time and space, as we know them, are purely arbitrary tools of convenience. Changes occur from time to time as more useful standards are discovered. The cubit was widely accepted in biblical times as one unit of length; today it is obsolete. It is possible, though not ideal, that two or more systems of measurement may exist and be in use simultaneously in different parts of the world. The metric system which many regard as superior to the system commonly in use in this country will, in all probability, some day be in common use here. These differences, while introducing a certain awkwardness where comparisons or combinations of data are concerned, have no greater significance than differences in the currency systems of the world because they are more or less readily translated one into the other.

Accounting, which is a discipline of expression, like the physical sciences, works with facts but this is the sole significant point of community. Where science looks within the fact to discover principle, accounting looks, or should look, to the desired end result—the most effective method of expression in terms of that which will meet the greatest needs—and proceeds to create and define those principles which will achieve its ends. Thus, as I have said, principles give meaning to accounting and accounting will fall far short of its proper function if it is, or should become, shackled to principles unsuitable to its needs.

#### *Principles and Methods*

In auditing we have drawn a sharp distinction between standards and procedures. Attempts have been made to de-



velop a similar, logical distinction in accounting—that is, between principles and methods of applying principles. At first blush, it might appear important that we should promote an awareness in accounting between principle and method, but I wonder if this is so. The distinction in the field of auditing is important to us as auditors because of what it contributes to our ability to make our examinations of reasonably consistent quality. In the field of accounting, if the distinction between principle and method has significance, it can only be for what it may contribute to the ability to turn out more useful statements which, of course, implies that those who make use of the statements must have the same full understanding of the distinctions as does the accountant who is responsible for the preparation or approval of the data. We know this isn't so today and I, for one, despair that it will ever be so. This is no mere academic defect. It is, in fact, very close to the root of some of the criticism which has been voiced with increasing frequency in the last decade concerning financial representations. I do not advocate that we should abandon the concept of usefulness in distinguishing between principle and method. I do hold that there is no logical or practical merit in seeking to narrow the choices of acceptable principles and, at the same time, allowing such wide latitude of choices of method as to make the principle itself relatively of no importance.

The distinction between an accounting principle and an accounting method or practice is one which has also caused the SEC some concern. Because no clear distinction exists between accounting principles, on the one hand, and accounting practices and methods, on the other hand, the SEC promulgated Rule 3.07 in its Regulation S-X reading as follows:

- (a) Any change in accounting principle or practice, or in the method of applying any accounting principle or practice, made

during any period for which financial statements are filed which affects comparability of such financial statements with those of prior or future periods, and the effect thereof upon the net income for each period for which financial statements are filed, shall be disclosed in a note to the appropriate financial statement.

In addition, Rule 2.02 of the same regulation dealing with accountants' certificates provides, among other things, that the accountants' certificate shall state clearly:

- (ii) the opinion of the accountant as to any material changes in accounting principles or practices or method of applying the accounting principles or practices, or adjustments of the accounts, required to be set forth by Rule 3.07.

#### *Emergence of Principles as Criteria*

Except in regulated industries, until some 25 years ago, there were virtually no effective restrictions on the choices of management as to the principles of accounting and disclosure which they used in setting forth financial representations. The advent of the tax on corporate income in 1913 brought about some measure of uniformity as corporate accounting veered toward the acceptance of those practices which would tend to minimize taxes. Most of the larger companies were not examined by independent public accountants regularly. It was, in fact, notable when one was. Such examinations as were made were more often than not brought about by the uneasiness of credit lenders. Opinions of the independent accountants were short and to the point. They made no reference to any body of generally accepted principles because there was no authoritative codification.

In 1930, the American Institute of Accountants appointed a special committee to cooperate with stock exchanges in an effort to improve reporting—an event which was to have a profound influence on narrowing areas of difference in corporate

accounting. The committee, under the leadership of George O. May who, for some years previously, had been accounting advisor to the New York Stock Exchange, was the first formal group to address itself in the name of the profession to the task of seeking ways and means to make the accounts published by corporations more informative and authoritative and to educate the public as to the limitations as well as the value of accountants.

The history of the committee work and its contributions are well known to most of you. We need not consider them fully this morning; in fact, there is time only to generally review their findings as a notable historical basis for subsequent accounting thinking in the field of our present interest.

The efforts of the committee, and the steps taken within the profession following and based upon its report, are generally credited with the avoidance of an undue extension of governmental regulation of the practice of accounting. Fortunately, the SEC, which came into being during this critical period, welcomed the opportunity to limit its functions. The foundations thus were laid for a peaceful and mutually helpful coexistence which has continued to this day.

#### *The Alternatives*

It was the view of the special committee that two possibilities existed for narrowing the areas of difference and eliminating inconsistencies in financial reporting. The first alternative would be to have a competent authority select, from the body of acceptable methods then in use, detailed sets of rules which would become binding upon all corporations of a given class. Under this alternative, financial reporting by all corporations would be patterned after the procedures which apply to regulated industries such as the railroads which are under the jurisdiction of the Interstate Commerce Commission and are required to follow accounting classifications pre-

scribed by the Commission. The committee, without specifying reasons, stated its belief that the arguments against any attempt to apply this alternative to industrial corporations were overwhelming.

#### *The Choice*

It considered that a more practical alternative would be to leave each corporation free to choose its own methods of accounting within broad limitations requiring disclosure of the methods employed and consistency in their application from year to year. The committee's conclusion was influenced, to a large extent, by its belief that it was relatively unimportant to the investor which precise rules or conventions are adopted by a corporation in reporting earnings if the investor was informed as to what the methods were and had assurance of the consistency of their application.

#### *The Program*

The committee concluded its report by recommending certain objectives to the New York Stock Exchange. I will not quote them in full but I believe, because of their importance, I should summarize them.

1. To encourage recognition of the fact that the balance sheet is not a representation of present values.
2. To emphasize that balance sheets necessarily are, to a large extent, historical in character and are largely the reflection of individual judgments.
3. To emphasize the relative importance of the income account and the recognition that it must be so presented as to constitute the best reflection reasonably obtainable of the earning capacity of the business under the conditions existing during the period to which it relates.
4. To require acceptance by corporations of certain broad principles of accounting which are regarded as having achieved general acceptance but to make no attempt to restrict the right of the corporation to select detailed methods of accounting.

At the request of the Stock Exchange the special committee suggested a revised form

of independent public accountant's report, which achieved immediate acceptance in the profession. The opinion paragraph of this report for the first time related the fairness of presentation to the consistent use of accepted principles of accounting.

### *The Institute Accepts Responsibility*

Promptly after the conclusion and publication of the correspondence, the Institute, in recognition of the need for a formal and continuous facility for considering matters in this field, appointed a special committee on the development of accounting principles. In 1938-39 the special committee was recognized and enlarged and has since been known as the Committee on Accounting Procedure. Simultaneously, a Research Department was organized within the framework of the Institute staff. The committee's objectives, as initially stated, were:

1. To further the development and recognition of generally accepted accounting principles, and
2. To narrow areas of difference and inconsistency in accounting practices.

By these actions, the Institute acknowledged a responsibility and assumed leadership.

### *Procedural Rules*

The newly created Committee on Accounting Procedure adopted rules for its own conduct and guidance. In general, these provided that any opinion or recommendation before issuance is to be submitted to all members of the committee; that no opinion or recommendation would be issued unless it received the approval of two-thirds of the entire committee; and that any member of the committee who dissented from an opinion would be entitled to have the fact of his dissent and the reasons made a matter of record. The rules provided further that the committee should give careful consideration to prior opinions, to prevailing practices, and to

the views of professional and other bodies concerned with accounting procedures before reaching a conclusion in a particular instance.

Unless formal adoption by the Institute membership is asked and secured, the authority of opinions reached by the committee rests upon the general acceptability of such opinions. It is recognized that extraordinary cases may exist in which departures from the opinions might be justified and it is understood that the burden of justifying any such departure must be assumed by those who adopt treatments other than those recommended by the committee. Certain other rules not particularly pertinent to this discussion also were adopted.

Membership in the committee is by appointment of the President. The committee consists of a chairman and twenty members. An attempt is made to see that a cross section of practice is represented in the committee membership.

### *Operation and Problems of the Committee*

Since its creation, the committee has issued forty-eight Accounting Research Bulletins, the first forty-two of which were reviewed, restated, and revised as recently as 1953. I would like to make it as clear as I can that my concern today has solely to do with our research methods and in no sense is intended to imply criticism of present or past members of the committee. The reasoning or the conclusions of the committee with respect to any one of these bulletins is not at issue here. My concern is with the need for a re-examination of the more basic question as to whether the procedures in use are those which are best designed to achieve our purposes.

Those in the Institute who, over the years, have had responsibility for the development of accounting research, have recognized the importance of obtaining the views of industry spokesmen. They

have tried to devise a procedural method which would achieve the purpose. They have not succeeded. The fault is not altogether that of the accounting profession—in fact, I think it rests largely upon a failure of industry to respond in any major sense to its own obligations, and a disposition to interpret leadership by the Institute as an indication of willingness to assume full accountability.

#### *Restrictions of Existing Research Methods*

In the field of medicine pure research is largely in the hands of biochemists and other specialists and not in the normal province of the practicing physician. Techniques exist to test new drugs before they are offered to the public. In law, the continued acceptability of established concepts is tested each time a case goes to trial.

We have no comparable laboratory in which the new may be examined and tested against the old. This is a serious handicap to creative thinking. I cite as an example the interesting and important question of the continued validity of the assumption that in spite of its instability, the dollar is the best common denominator of accounting expression. You all know that strong conflicting views exist on this matter. We are told that, as a profession, we are remiss because we have not recognized economic developments. To the extent that such criticism implies negligence in considering the question, it is in error. You all know the validity of the assumption has received thoughtful and extensive consideration. Without at the moment raising a question of the merits of the conclusion, it is the present official position of the Institute that attempts to reflect the declining value of the dollar should, for the present, be achieved by supplementary data and explanations and not through the formal accounts. Thus, an independent certified public accountant whose client would like to compute depreciation on a

basis other than historical cost must advise his client that to do so would be contrary to the generally accepted principle involved and would require the accountant to so state in his report. It is my understanding that the SEC would view as deficient financial statements which were accompanied by an auditor's opinion qualified as to their conformity with generally accepted accounting principles.

#### WHERE WE NOW STAND

It seems clear that present processes permit little, if any, opportunity for sound experimentation with new ideas.

To summarize, this is where I think we stand:

1. Although new events have created new differences and inconsistencies in the meantime, there is general recognition that the areas of difference and inconsistency in financial reporting have been narrowed substantially in the last quarter century and that this could not have been achieved except through the acceptance of the concept of a body of generally accepted accounting principles as criteria.
2. The Institute has accepted almost exclusive responsibility for the development of research in the field of accounting principles. In many respects this has been helpful but it certainly may not be said to have been ideal. To the extent that research is conducted outside our Institute as, for example, that which finds expression in research statements issued by the American Accounting Association, it is not coordinated with our own.
3. Present methods of accounting research give no opportunity to test new ideas—in fact, there is some justification for a belief that they tend to stifle creative thinking.



### *A New Approach to Research*

In a paper which I presented at New Orleans last fall and on which my remarks today are, in part, based, I proposed that the Institute undertake to restudy the research program. Solely to get started, I suggested that:

1. The development of accounting principles should be regarded as in the nature of pure research.
2. An adequate research organization should be provided. There are reasons which suggest that it would be best if the research organization were to be an adjunct to and not a formal part of the Institute itself. This is a basic question of policy which should be resolved in the restudy which I recommended should be undertaken. One possibility is to create a Research Foundation having the same organizational relationship to the Institute as does our present Accountants' Foundation.
3. The research organization should be staffed with personnel having proper academic and experience backgrounds (we might require as many as five or six men of outstanding ability). There should be no restrictions which would require that the staff be drawn exclusively from people who had been in practice; in fact, it might be preferable if the staff, in part, were composed of those whose background would enable them to contribute the academic and industry points of view.
4. Industry and our profession should jointly share the cost of the program in equitable proportions by contributions to the Research Foundation.
5. The function of the research organization generally should be to carry on continuous examination and re-examination of basic accounting assumptions and to develop authorita-

tive statements for the guidance of both industry and our profession. In doing so, the research staff should have full power and facilities to consult, as necessary, with representatives of industry, with representatives of the teaching profession, and with representatives of regulatory bodies. Representatives of such groups should have the *privilege* of presenting their ideas to the research staff. The functions of the research staff should also include the development and distribution of material designed to improve the understanding of those who rely upon financial reporting as to the nature, value and limitations of financial representations.

6. Statements issued by the research organizations should be submitted for approval or rejection of basic ideas to the Council of the American Institute of Certified Public Accountants. It would not be expected that Council would concern itself with form or manner of expression but only with the substance of the ideas presented for its approval or rejection. As a practical matter Council might appoint a "screening" committee to review proposals prior to their formal submission for voting.
7. Upon receiving approval of two-thirds of the members of Council voting upon any particular bulletin, it should be considered binding upon members of our Institute.

Research is a full-time job and should be recognized as such. Hundreds of the foremost members of our profession have devoted uncounted hours of hard work to the program of the Committee on Accounting Procedure. Many of my own partners have served and I know at firsthand of the tremendous demands on their time and energy. I am sure that all who have had the privilege of service have a well-

founded conviction that their efforts were worthwhile. Yet I also believe that all of them at times must have wondered whether the job was not too demanding for any voluntary group. The necessity of changing the personnel of the committee from time to time is disruptive of continuity and this, too, is a problem.

#### NEED FOR A RESEARCH PROGRAM

In spite of its devotion to its tasks, the ever-increasing complexities of business make it inevitable that we should be faced with the question of whether the committee can move fast enough to keep up with economic and social changes which affect accounting and financial reporting. The adoption of a program of the type which I suggest should permit an orderly division of the total responsibilities of the research organization and this should do a great deal to enable us to move forward with all necessary speed and the assurance of carefully considered judgments. One of our occasional mistakes has been to place too much emphasis on speed in getting out bulletins. This may strike some of you who are aware of the long periods of deliberation of the committee on certain problems as an unusual conclusion. Nevertheless, I think it is true that the few bulletins which have been most open to question are those where normal procedures were accelerated in an endeavor to meet a time schedule. Merely to change the organizational form under which research is conducted will not, of course, obviate the need to move with speed when the circumstances require that we should do so but a well-staffed research organization which can devote its full energies to a continuous process of research should be able better to anticipate the needs of the times and do a great deal to improve our capacity for prompt action.

Another problem inherent in our present methods of research is the difficulty of reversing positions previously taken. The need for doing so gives rise to awkward

questions of procedure and protocol and tends to encourage procrastination. I believe that a research organization which, in a sense, would be independent of the Institute would have less difficulty with problems of this kind.

#### *What We Are Doing About It*

With the approval of the Executive Committee of the Institute in January, I appointed a special committee to restudy the whole subject of accounting research. The committee, under the chairmanship of Weldon Powell, a member of the firm of Haskins & Sells, consists of three other practicing accountants: Paul Grady of Price Waterhouse & Co., Leonard Spacek of Arthur Andersen & Co., and William W. Werntz of Touche, Niven, Bailey & Smart; two members from industry: Dudley E. Browne, Comptroller, Lockheed Aircraft Corporation, and Arthur M. Cannon, Vice President and Treasurer, Standard Insurance Company; Robert K. Mautz, Professor of Accountancy, University of Illinois; Andrew Barr, Chief Accountant of the Securities and Exchange Commission; and Carman G. Blough, Director of Research of the American Institute of CPAs.

The committee's scope is unrestricted and its job, in essence, is to determine whether there is a better method of conducting accounting research than that we now use. The committee members have exchanged views by correspondence on a series of basic questions framed by the Chairman. It has held one two-day meeting and filed a progress report with Council which is most encouraging. I have great confidence that the group will make a highly significant contribution in an important field where much needs to be done. When they have finished I think we all unquestionably will know more about the nature of accounting principles, the purposes which they serve, how they come into being, and how they are to be kept responsive to the needs of a changing economy.



*Announcing*

AMERICAN ACCOUNTING ASSOCIATION  
**PREDOCTORAL FELLOWSHIPS**

•

The Executive Committee is pleased to announce a program of predoctoral fellowships for accounting teachers, beginning with the academic year 1959-60. The first grant, in the amount of \$25,000, was received from Haskins & Sells Foundation, Inc. during the annual convention in August.

Eligibility criteria, the amount of the stipend, the procedures for application, and other details have not been completed as yet. Generally, however, it is expected that the fund will be expended over a period of five years with four or five fellowships to be available each year.

Application forms will be distributed upon request by the Secretary-Treasurer of the Association; they should be available in December.

Additional details will appear in the January 1959 issue of **THE ACCOUNTING REVIEW**.

*For the Executive Committee*

**C. ROLLIN NISWONGER, President**

# YOUNG EYES ON ACCOUNTING

KENNETH W. PERRY

*University of Illinois*

SEVERAL YEARS AGO while witnessing, with the development of the "Atomic Age" and the birth of the "Space Age," the glamorization of engineers, physicists, and scientists, a Task Committee on Student Personnel of the American Accounting Association was charged with the responsibility of preparing a career pamphlet describing the varied opportunities and depicting some of the challenges offered by the accounting profession. The pamphlet was to be made available to high school students throughout the country with the hope that those with the proper qualifications would consider an accounting career. The outcome of the committee's efforts, with the cooperation of the American Institute of Certified Public Accountants and the Institute of Internal Auditors, was published in January, 1958 under the title *Young Eyes on Accounting*. This article is an attempt to show what has been done so far and what it is hoped will be done in the future with *Young Eyes*.

## DISTRIBUTION PLAN

Realizing that effective distribution is essential to a project of this nature, the Task Committee drew up a tentative distribution plan well in advance of the publication date. The committee envisioned the distribution problem as encompassing two phases. The initial phase was to be concerned primarily with making the availability of the pamphlet known to accountants, educators, and other interested parties throughout the country, and to get them to request copies for distribution wherever and whenever appropriate; the second phase was to be a follow-

up on the initial phase whereby interest once created in the project would be maintained.

## Initial Phase

As indicated above, it was hoped that if the availability of the pamphlet was made known, it would result in the receipt of requests for copies. It was felt that copies sent in response to specific requests were most likely to be used to good effect. Two approaches were used when trying to make the availability known. One was an attempt to get widespread publicity in various accounting, educational, and vocational publications, and the other was by the use of direct mailings.

Over two hundred editors of selected accounting, educational, and vocational periodicals were contacted and asked to run a news item on the nature and availability of *Young Eyes*. The cooperation of the various editors was most gratifying, with the announcement appearing in more than one hundred publications within the three months following the publicity mailing. Practically one hundred per cent of the accounting publications contacted carried the announcement, and publicity was obtained in educational and vocational publications on a nation-wide, regional, and state basis. The effectiveness of the publicity has been evidenced by the receipt of requests from every state and many foreign countries including Canada, England, France, Mexico, and New Zealand.

In addition to trying to obtain widespread publicity in the initial phase, it was also felt, as previously indicated, that direct mailings to selected groups would be desirable. Since basically the assistance of

two groups, namely accountants and educators, was needed, it was decided to concentrate the direct mailings on these. As a consequence, direct mailings were made to (1) American Accounting Association members and educational committees of accounting organizations and (2) selected high school guidance counselors and mathematics teachers. Since it also appeared that it might be desirable to mail directly to high schools, a trial run was conducted on an experimental basis in the state of Ohio. The mailings to high school counselors and math teachers were handled by the General Electric Company and the other mailings were handled by the Association.

Although it is hard to evaluate a program of this nature, the initial phase of the distribution plan seems to have been somewhat successful as evidenced by the following statement and supporting schedule. In Schedule A it will be noted that there has been an attempt to categorize the requests. While most requests can be easily classified as coming from (1) high schools, (2) colleges, (3) professional organizations (state societies, chapters, controls, etc.), (4) public accounting firms, and (5) industrial organizations, some requests are received, however, that cannot be classified in any of these categories and as a result are considered as miscellaneous. Classified under this heading would be requests from such

SCHEDULE A  
REQUESTS FOR YOUNG EYES

As of May 31, 1958

	Number of Requests	Copies Requested
High schools.....	911	31,562
Colleges.....	240	35,521
Professional organizations.....	69	26,595
Public accounting firms.....	106	4,468
Industrial organizations.....	63	2,161
Miscellaneous.....	234	1,433
Total requests as of May 31	1,623	101,740

sources as: individual students, guidance services, public libraries, and vocational organizations.

Second Phase

As previously indicated, the objective of the second phase is one of following up and trying to maintain, and, wherever possible, increase the interest created during the initial phase. With the coming of the 1958-59 academic year the distribution of *Young Eyes* appears to be well into this stage, and this is where the assistance of every member of the accounting profession, be he a governmental accountant, an industrial accountant, a public accountant, or an accounting teacher, is needed. If the pamphlet is to make its greatest contribution, every member of the profession must use it whenever and wherever appropriate as an aid in selling the profession to qualified students. This means that whenever the occasion presents itself, if *Young Eyes* will add anything to what one is doing to stimulate a student's interest in the profession, it should be used. Likewise, whenever possible, high school educators should be made aware of the availability of the pamphlet.

CONCLUSION

Although *Young Eyes* has been very well received initially, if it is to make the contribution hoped for by the Association there is still a lot of work to be done—a lot

DISTRIBUTION  
YOUNG EYES ON ACCOUNTING

As of May 31, 1958

To AAA members.....	8,000
To editors.....	255
To educational committees.....	845
To guidance counselors (courtesy General Electric).....	4,500
To math teachers (courtesy General Electric).....	17,000
To Ohio high schools.....	5,000
To requesters (see Schedule A).....	101,740
Total distribution as of May 31.....	137,340

of students are yet to be reached. Consequently, as the current chairman of the Association's Committee on Accounting Careers, which is charged with the responsibility of distributing *Young Eyes*, it is this writer's hope that if you can help in any way you will please do so. Remember

*Young Eyes* may be obtained in quantity and without charge by dropping a card to:

American Accounting Association  
P. O. Box 3068  
University Station  
Columbus 10, Ohio

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EDITORIAL NOTE

In the July 1958 issue, page 380, the author, Abraham J. Briloff, should have been designated as Lecturer, Bernard M. Baruch School of Business and Public Administration, The City College.

# PROGRAM LEADING TO THE PROFESSIONAL DEGREE OF MASTER OF ACCOUNTING SCIENCE (M.A.S.)

DEPARTMENT OF ACCOUNTANCY

*University of Illinois*

**T**HE increased emphasis on professional training for accountancy indicates the need for a fifth year of study designed to prepare the candidate for a professional career in public, governmental, or industrial accounting. The Master of Accounting Science (M.A.S.) program has been designed to provide such training. It permits qualified students to complete the requirements for this degree and to prepare for the C.P.A. examination in one year. It will be offered for the first time in September, 1958. The Department will continue to offer, as in past years, work leading to the M.S. degree and the Ph.D. degree.

## *General Requirements*

Candidates for the Master of Accounting Science degree must present at least 24 semester hours of undergraduate work in accountancy, including a course in each of the areas of cost accounting, Federal income tax accounting, auditing, and advanced problems. Eight units of graduate credit, including 481, Concepts and Principles, Accountancy 483, Income Determination, and Accountancy 494, Methods and Practices in Professional Research, are required. In addition, one or more minors of one to four units in a field or fields outside the area of accountancy are required. The minor field or fields to be selected and the number of units will be determined in consultation with the adviser, and will depend upon the undergraduate background of the student, his educational objective, and other factors.

## *Optional Programs*

Each candidate must declare his intention of preparing for public accounting, governmental accounting, or industrial accounting. Those intending to enter public accounting ordinarily should take, in addition to the required courses previously mentioned, at least three of the following courses, including the first two named:

Accountancy 472—Auditing Standards and Techniques  
Accountancy 477—Professional Problems  
Accountancy 471—Accounting Reports  
Accountancy 372—Auditing Problems and Cases  
Accountancy 374—Advanced Income Tax Problems  
Business Administration 373—Electronic Data Processing for Business.

Those preparing for careers as comptrollers, chief accountants, cost accountants, or executive positions in industrial or commercial enterprises ordinarily should take at least three of the following courses, including the first two named:

Accountancy 461—Administrative Accounting  
Accountancy 466—Cost Accounting  
Accountancy 473—System Design and Installation  
Accountancy 362—Business Budgets and Accounting Control  
Accountancy 366—Advanced Cost Accounting  
Business Administration 373—Electronic Data Processing for Business.

Those preparing for careers in local, state, or Federal governments, or for accounting or administrative positions in

non-profit organizations, institutions, or government agencies ordinarily should take at least three of the following courses, including the first two named:

Economics 414—Public Finance

Accountancy 441—Governmental Accounting  
Accountancy 461—Administrative Accounting  
Accountancy 466—Cost Accounting  
Accountancy 341—Governmental Accounting  
Business Administration 373—Electronic Data Processing for Business.

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#### EDITORIAL NOTE

In the July issue, page 401, the title of Professor W. G. Leonard was incorrectly stated. Professor Leonard is Director of Professional Courses in the School of Commerce, Queen's University.



## THIS NEW COSTING CONCEPT—DIRECT COSTING?

JAMES DON EDWARDS

*Professor, Michigan State University*

**I**N the early stages in the development of bookkeeping, business activity was conducted on an individual proprietorship or venture basis. The total costs associated with the individual venture were clearly ascertainable within a reasonably short time, and the determination of the success or failure of the venture could await their conclusion. The industrial revolution of the eighteen and nineteen hundreds and the many resulting changes in the nature of business activity created the need for an entirely different concept of income.

One of the basic assumptions of modern accounting theory is continuity. The ultimate outcome of current activity lies far in the future. However, many management decisions cannot await the ultimate outcome. The several interested parties in accounting data need test readings from time to time to gauge the progress being made. Accounting theory and practice seek to provide such test readings by matching the costs and revenues which have flowed past the production meter in a specific interval of time.

The traditional accounting concept is that, ideally, all cost incurred should be viewed as ultimately clinging to goods sold or services rendered. If this conception could be effectively applied in practice, the net accomplishment of the enterprise could be measured in terms of units of output rather than of intervals of time. This ideal condition can be approached in some types of terminable undertakings of a more or less venture basic type. However, in the more typical undertakings, the degree of continuity of activity prevailing prevents the convincing assignment of all types of cost to particular departments, operations and items of product. Since all costs do not

attach directly to the product, the accountant is forced to fall back upon the time period as the unit for associating certain expenses with revenues. Still, the conventional accountant views time periods as a convenience or a substitute and the ideal concept of all costs attaching to product remains unchanged. The ideal is to match costs incurred with the effects attributable to such costs.<sup>1</sup>

For the entire life of the business, logic suggests that all costs incurred are the costs of the total revenue realized. Since the industrial firm realizes revenue through the production and sale of a product, the total costs necessary to produce and sell the total product are obviously the costs of obtaining the total revenue. A good logical case can be made for the idea that the total costs are also the costs of the total product. Conventional production costs create form utility in the product. Selling and administrative costs, and in fact all other costs necessary to place the product in the hands of the purchaser, add time and place utility to the product. If the product is thus considered as the bundle of utilities placed in the hands of the consumer, all costs are, in the long run, product costs. The practical difficulty of assigning some costs to products has necessitated the conventional arbitrary rule which requires that almost all costs which succeed the inventory point be treated as expenses of the period and reductions of gross revenue.<sup>2</sup>

<sup>1</sup> W. A. Paton and A. C. Littleton, *An Introduction to Corporate Accounting Standards*, American Accounting Association, Chicago, 1940, p. 15.

<sup>2</sup> John A. Beckett, "The Pros and Cons of Direct Costing as Contrasted with Full Costing," *The Journal of Accountancy*, April, 1953, p. 484.

The conventional treatment of manufacturing expense or indirect cost is a comparatively recent development. The earliest methods of product costing were concerned with the accumulation of what are commonly referred to as prime costs. These costs of labor and materials directly included in the product are relatively easy to determine and are obviously part of the cost of the product. However, due to the need for increased efficiency and cost reduction, the cost accountant became aware that certain other costs were not so directly related to the product and thus had to be subjected to control. For this purpose the cost accountant developed the conventional methods for estimating indirect costs and applying them to goods produced. It was recognized that this method was neither perfect nor precise. The estimates in advance of both the total of such costs to be incurred and of the quantity of product which would bear such costs could never be entirely accurate. As a result, the total cost could not be definitely known until the indirect costs had been incurred and the product produced. The accountant was also aware of the fact that certain of these indirect costs would remain constant regardless of the quantity of product produced while others would fluctuate according to the level of output, just as would the prime costs. The significance of the indirect manufacturing cost remaining constant, and fluctuating, through its effect on unit cost of the product, was recognized and such devices as the flexible budget and the break-even chart were developed to facilitate management decisions and cost control. Since cost-volume-profit analysis is based upon cost and sales revenue, certain accountants decided it would be advantageous to redesign the accounting records and the cost and income statements to show such relationships directly rather than through supplementary analyses. The separate accumula-

tion of fixed and variable costs in the accounts would eliminate the necessity for a later analysis in order to prepare the desired statements. This is the philosophy adopted by the proponents of direct costing.<sup>3</sup>

Direct cost is defined as the cost of materials used, labor employed and the expenses, which would not have been incurred but for the production of this output.<sup>4</sup> This definition might also be applied to conventional total cost. The difference would arise from the unlike intention concerning the meaning of expenses incurred to produce the given output. The direct costing accountant would exclude fixed manufacturing expense from this category. The conventional accountant would hold that all manufacturing expenses were incurred in order to produce the output of the period and thus are assignable as a part of the cost of each unit of output. An interesting related point often made by direct costing advocates is that conventional total costs are never correct since they require adjustment at the end of the accounting period for over or underabsorbed manufacturing expense, while direct costs may always be correct since they require no such adjustment.<sup>5</sup> This statement seems to infer an overly optimistic evaluation of the accountant's ability to predict variable manufacturing expense. Few, if any, types of cost are either entirely variable or entirely fixed. Since this is the case, the determination in advance of the variable manufacturing expense per unit remains a matter of best estimate.

In addition to the ideas that fixed indirect costs are entirely product costs and, its opposite, that such costs are entirely expense, there is a third concept. This view

<sup>3</sup> Research Committee of the N.A.C.A., "Direct Costing," *N.A.C.A. Bulletin*, Series 23, Section 3, April, 1953, p. 1082.

<sup>4</sup> F. C. Lawrence and E. N. Humphreys, *Marginal Costing*, Macdonald and Evans, London, 1947, p. 6.

<sup>5</sup> *Ibid.*, p. 25.

holds that indirect costs may be product costs or they may be partly product cost and partly loss. Fixed costs run with time, not production or revenue. Therefore, those fixed costs which run with idle time are losses. They represent costs which were incurred and yet did not benefit the firm. This philosophy results in the assignment of part of the indirect costs to product. The balance must be deducted from operating income as a loss of the period. For example, if a company operates at 50% of the capacity, 50% of the fixed costs incurred in order to maintain that capacity is used to produce the period's output. The other 50% of the capacity was available during the period and its costs were incurred, but the actual output realized no benefit from the additional capacity. Thus the product of the period can justly absorb only 50% of the fixed costs. The balance could have been used equally well. Since it was not, it must be viewed as a loss and deducted from

represent full utilization of capacity and part of the fixed costs are treated as losses, it suggests that idle capacity is the result of improper management decision concerning the necessary capacity costs. When all fixed indirect manufacturing costs are treated as expenses, as under direct costing, the assumption is that the costs of maintaining capacity are a necessary expense of being in business and will be incurred regardless of the volume of output.

The effect of these three different methods, 100% of fixed cost charged to product, 80% of fixed costs charged to product, and direct costing—of handling fixed charges upon income, is an interesting one. A simple illustration may point out such effects. Assuming that the firm operates at 80% of capacity, total sales, fixed costs and variable costs are unchanged, and ending inventory is 20% of the period's production, the reported income will still be changed.

	100% of Fixed Costs Charged to Product		80% of Fixed Costs Charged to Product		Direct Costing	
Sales.....		\$100,000		\$100,000		\$100,000
Less Costs of Goods Sold:						
Variable.....	\$40,000		\$40,000		\$40,000	
Fixed.....	20,000	60,000	16,000	56,000	—0—	40,000
Gross Profit.....		40,000		44,000		60,000
Less:						
Selling and Other Expense.....		10,000		10,000	\$10,000	
Fixed Costs.....					25,000	35,000
Operating Profit.....		\$ 30,000		\$ 34,000		\$ 25,000
Less: Idle Capacity Costs.....				5,000		
Net Income.....		\$ 30,000		\$ 29,000		\$ 25,000

operating profit.<sup>9</sup> When this concept is used, fixed costs charged to the product become directly variable with volume.

The charging of all fixed indirect costs to product would seem to indicate the philosophy that the entire capacity which was available was essential to the production of the actual output. When output does not

Thus, three different profit figures result from the same set of facts. The difference in profits among the examples is offset by a different valuation of the ending inventory. Where 100% of the fixed indirect costs are charged to product, the ending inventory will include \$5,000 of such costs. Where 80% of the fixed costs are charged to product, the ending inventory will contain \$4,000 of fixed costs, while under

<sup>9</sup> Charles F. Schlatter, "Fixed Expense," *THE ACCOUNTING REVIEW*, April, 1945, p. 161.

direct costing it will contain no fixed costs.

One of the most commonly accepted accounting conventions is that the sales event is the proper point for the recognition of revenue. The direct cost advocate often holds that the charging of fixed costs to product is apt to make reported income a function of production rather than of sales. If sales remain the same, total fixed costs and variable unit costs remain unchanged but production varies, conventional accounting will produce different profit figures among the periods. This phenomenon results from the change in unit cost due to spreading the fixed charges over a varying base.<sup>7</sup> Without a change in selling price, periods of low sales may show larger profits when production is high and total unit cost is reduced through the decrease in fixed unit cost. Similarly, periods with high sales may show smaller profits if production is low and fixed unit cost is increased. To overcome this situation, the direct cost accountant holds that fixed costs should be assumed to be recovered from the revenues of the period in which they are incurred. The conventional accountant defers their recovery until the period in which the product is sold. This is simply another way of stating that fixed charges are either costs of the product or period charges. The decision made in answer to this question must depend upon the purpose for which cost accounting is being done. It seems likely that there can be several different cost figures for any given product all of which are valid for the purpose intended.

The costs determined by direct costing are perhaps most useful for the purposes of pricing and management decision. When a company has idle capacity, it may be highly desirable to accept orders at a price which does not entirely cover both vari-

able and fixed costs. In such a situation, the total cost of producing the product is of little importance to management. It is more likely that management needs to know the particular price which will cover variable costs and perhaps contribute something toward indirect fixed costs. Once a firm has committed large amounts of its funds to plant facilities its only alternatives are to use those facilities or to try to find a buyer for them. Short-run considerations may then dictate the acceptance of any work which will cover out-of-pocket costs. However, in the long run, fixed costs must also be borne by the revenue from the sale of products and the arbitrary assignment of such costs to the products is not necessarily a vice. If certain products can reasonably be expected to carry a certain amount of fixed cost, it may be desirable to consider such cost as inherent in the product.<sup>8</sup> It is also possible to establish prices and policies with reference to variable cost coverage without using direct costing in the accounts. Break-even analysis and flexible budgets involve a classification of costs into their variable and fixed components.

Direct costing also makes claims of utility for cost control purposes. Surely such utility exists. But once again the benefits to be derived from this procedure are not the result of new and revolutionary tools. Ever since the distinction between fixed and variable costs was first recognized it has been possible and practical to use that distinction for cost control through flexible budgets. Moreover, costs which are classified as direct in that they are intimately related to product cost are not necessarily direct as to control. In other words, not all variable costs are subject to control by direct means nor are all fixed

<sup>7</sup> Donald L. Raun, "The Problem of Fixed Charges," *THE ACCOUNTING REVIEW*, July, 1951, p. 339.

<sup>8</sup> John A. Beckett, "A Study of the Principles of Allocating Costs," *THE ACCOUNTING REVIEW*, July, 1951, p. 330.



costs uncontrollable. For example, power costs may represent a variable cost, but due to the impracticability of metering power in certain operational areas, such costs will be uncontrollable in those areas. Or costs which are classified as fixed, such as window washing by the service department, may still be directly controllable.<sup>9</sup> The classification of costs by object of function may be equally or much more useful for control in some such cases.

One of the problems of direct costing arises in the handling of costs which are in part fixed and in part variable with volume. These semi-variable costs acquire their dual nature for one or both of two reasons. Cost classifications generally used in accounting are either based upon the object for which the expenditure was made or upon the function performed. For example, indirect labor usually contains the cost of maintaining a minimum organization necessary to keep the plant ready to operate. This cost is essentially fixed. Indirect labor also includes costs beyond this minimum amount which vary with volume. The second cause of semi-variable characteristics is that production factors cannot be divided into infinitely small units. Again using indirect labor as an example, if a third shift is added, perhaps in order to obtain only a small additional volume, a whole new set of foremen, clerks, etc., may be required.<sup>10</sup> Since direct costing excludes fixed costs from product costs, semi-variable costs must be broken down into their fixed and variable components. This process necessitates much analysis and perhaps revision in reference to many such semi-variable, fixed and variable costs. Indirect costs such as power may include a flat rate which is the fixed component plus

a per unit charge for quantities in excess of the base amount. These additional charges may be on a decreasing rate according to quantity used. Even such supplies as sweeping compound may have a fixed component required to keep the factory presentable and a variable directly with volume. Addition of another machine which increases output only 50% may necessitate the use of 100% more sweeping compound. This of course is only a minor cost factor and such matters have been handled satisfactorily in flexible budgets and cost-volume analyses for years. However, semi-variability does illustrate the point that variable indirect costs are not as precisely predictable as the direct cost accountant is apt to infer.

One of the types of cost usually assumed by direct costing to be fixed is depreciation. But in the long run even this type of cost is variable. If the accounting periods were extended to coincide with the life of the business, all asset costs would become expenses. Even with the conventional accounting period, depreciation is not always recognized on the basis of time. When depreciation is charged on the basis of machine hours or perhaps mileage it becomes as variable a cost as direct labor. If direct costing is being used, the question arises as to whether or not such depreciation charges should be included in inventory or charged to the period in which the machine is used. The total amount to be amortized is determined in advance by the purchase of the asset just as in the case where depreciation is computed on a time basis. In this sense, the cost is fixed. And yet it seems inconsistent to treat such a factor as an expense in one case and as a cost in another simply because of the use of a different method of prorating. The cost of using a machine is either a cost of producing the product or an expense of the period, regardless of the technique of determining the amount of such cost. Logic seems to

<sup>9</sup> Committee on Cost Concepts and Standards of the American Accounting Association, "Report on Cost Concepts and Standards," *THE ACCOUNTING REVIEW*, April, 1952 p. 179.

<sup>10</sup> Research Committee of the N.A.C.A., *op. cit.*, p. 1086.

dictate that it must be one or the other and not both.

The effects of direct costing upon inventory valuation and income determination have been illustrated before. But it is in these areas that direct costing must stand or fall. There is no denying the utility of direct costing's contribution to cost-volume analysis for management decisions, though this information might be obtained by other means. But is direct costing acceptable for the other cost accounting purposes? The Committee on Accounting Procedure of the American Institute of Accountants has stated that the exclusion of all overhead from inventory costs does not constitute an acceptable accounting procedure. However, the same Committee does hold that idle facility expense and other abnormal costs may require treatment as period charges rather than product costs.<sup>11</sup> Inventory valuation is the "tails side" of the income determination coin.

Direct costing's approach to income measurement is to deduct from sales dollars the direct costs of producing the articles sold and the direct selling expense. The result is the marginal contribution toward fixed manufacturing, general selling, and administrative expense. This method immediately reveals the effect of an increase or decrease in sales volume which is not necessarily evident when fixed charges are deferred as inventory costs.<sup>12</sup> But the conventional accountant might object strenuously to this treatment of costs and expenses. It has been held that a basic principle in the development of a reasonable scheme for matching costs and revenues is the idea that all costs are

homogeneous and rank abreast. In other words, costs are not recovered from revenues in a preferential order. If two or more factors are necessary to reach a given objective, no one factor should be excluded or treated in a manner which minimized its effect. Though the amount of a particular factor is less than that of another, its contribution to the product may not be denied. The type of income statement which eliminates all reference to various types of profit except the final net profit is an expression of this idea that all costs must be recovered from revenue before there is any sort of profit. The conventional accountant would hold that the elimination of fixed charges from inventory valuation, even if only for internal purposes, is an arbitrary distinction when the literal cost of manufacturing a product is considered.

In some companies, the fixed costs equal or exceed the direct costs. The cost of use of machinery is as directly related to the cost of the product as the power which turns the machine, though perhaps not as precisely predictable. Thus, depreciation may be viewed as basically on the same footing as labor and materials. The only difference between "congealed" labor and materials represented by plant costs and labor and materials applied to production as such is that the former are stocked for a period while the latter are acquired largely in the period used.<sup>13</sup> This, again, is simply a restatement of the long-run point of view that fixed costs are truly product costs rather than costs of being in business since the reason for being in business is to produce. This central point of controversy between conventional costing and direct costing probably cannot be resolved except on the basis of opinion. The two techniques are not necessarily mutually exclusive, but there is a practical limit to the quantity of

<sup>11</sup> Committee on Accounting Procedure, "Inventory Pricing," *Restatement and Revisions of Accounting Research Bulletins*, Bulletin No. 43 (New York: American Institute of Accountants, 1953), p. 28.

<sup>12</sup> Ted R. Hosick, "Effect of Direct Costing on Asset Accounting, Income Reporting," *The Journal of Accountancy*, October, 1953, p. 146.

<sup>13</sup> W. A. Paton and A. C. Littleton, *op. cit.*, pp. 67-68.



accounting which any one company can profitably support. Direct costing with adjustments to make its results acceptable for external purposes or conventional costing with flexible budgets and cost-volume analysis can provide the same information. Perhaps actual application is the only method which can prove the superiority of one system over the other in the individual case.

However, if accounting theory and practice is so "flabby" that the direct costing theory becomes acceptable for reporting purposes, the progress of the last 500 years will be "gone by the boards." If direct costing is accepted it will be the third regression following the acceptance of life and accelerated depreciation to become accepted theory and practice via the income tax laws.

## RELATIONSHIPS AND RESPONSIBILITIES OF TEACHING STAFFS TO EXECUTIVE DEVELOPMENT PROGRAMS\*

REX S. WINSLOW

*Professor, University of North Carolina*

**M**y role on the program this afternoon is to open up the discussion as to the place of the accountants, if any, in the work the School may undertake in connection with educational programs for outside businessmen.

As I thought about this topic, the first major question that occurred to me was, "What is the accountant's responsibility to the School?" When I sought an answer to this fundamental question, I was somewhat baffled when I was unable to discover one. There appears to be no written contract between the School and its instructional staff spelling out in detail the rights and duties of each. Rather the working agreement seems to be based on the assumption that both sides know the customary or the institutional arrangements by which the two cooperate in the academic process. Undoubtedly these arrangements vary from School to School but the most common and the most specific way in which the accountant sees his relationship to the School is that he agrees for a salary to teach so many semester hours or so many quarter hours. He thinks of these scheduled hours as his teaching load and refers to it as a full load, a half load, or a third load. Beyond these regularly scheduled class hours it also seems to be customary for the faculty to carry on an unspecified amount of the administrative chores, to serve on committees, counsel students, and to keep certain records and make certain reports. How much so-called

"free time" is left to the accountant probably varies widely among institutions, but the practice of accountants entering the commercial market and selling some of their time is rather widespread. Some schools of business take the position that the faculty should be encouraged to do outside "consulting work."

This consulting work as I have observed it with respect to accountants appears to be a euphemistic way of noting the fact that the accountants can pick up some extra change by doing audits and income tax work. Encouragement to do consulting work is usually explained on the grounds that outside contacts with the business community help build up the accountant's knowledge and increase his proficiency—providing the consultation involves something beyond routine work.

However not too much imagination or observation is required to see this practice from a different point of view and in a different light. The average business school can be seen to resemble a trade association with the dean as a paid executive secretary. The faculty members composing the association have much in common but they are also highly competitive. Each faculty member appears to act and think pretty much like any other small, private enterpriser. He has skills, services, and knowledge for sale; he competes for a share of the market with other professors; he attempts to put a brand on his product (usually a new jargon) which means some other professor cannot be substituted for him; he seeks to assure for himself a shelter from competition by getting his

\* This paper was presented at the Annual Meeting of the American Accounting Association at Madison, Wisconsin, on August 28, 1957.

courses required for a degree. All the other tactics and strategy of business competition may be observed in full bloom within the faculties of business schools.

Now, of course, when the School is in competition with other trades, say the liberal arts or the law school, the faculty unites behind the dean and uses similar strategy and tactics in fighting with other schools over registrations and shares of the budget. It all looks very homey and very natural when seen through the eyes of the academic man wearing his gray flannel suit rather than his cap and gown. As seen in this light, each faculty man would necessarily complain of being overloaded with academic chores.

The School recognizes that it cannot get the man, or thinks it cannot get the man, at a price the School can afford to pay. That is, it cannot buy his full time. Consequently his salary is expected to purchase only part of his time, and the rest can be sold in the commercial market so that his total take-home pay is competitive. This raises the question: How much of his time can the School command? Of course the faculty man sees himself as always overloaded, and justified in demanding reduction in his duties whereas the School wants to make use of his services as far as it can without additional pay.

For the purpose of further analysis let us assume that a commercial arrangement has been made—the faculty member and the School understand what his teaching load is, what his other duties are, and that he will have free time for sale in the market. It is understood that if the School should ask him to do more, it will have to compete for his time in the market.

Today this is a real rather than a hypothetical situation. Since the war many schools of business administration have taken on a new line of educational programs which go by the traditional title of adult education or the more sophisticated

term of continuing education. In general, these educational programs are designed for men who have completed their formal schooling, who are now engaged in business, who have varying degrees of experience, and who have need of further academic assistance in continuing their growth and development.

The most common type of such programs now in operation are probably those which carry the label of management development or executive development programs.

As in the case of all new educational fields this movement has made progress unevenly and at the present time has met with varying degrees of acceptance by business schools. Some have not taken official notice of such a field and when approached simply say they are not in that business. Other Schools which tolerate relationships with business groups usually have as the main consideration the additional revenue secured from leasing physical facilities during slack periods such as the summer months. Other schools encourage business men to approach them and will lend their name as co-sponsor of programs as well as provide housing facilities and perhaps a subsidy for certain other activities.

Finally we come to the Schools which have officially accepted adult education as a part of their responsibilities and are actively promoting it. Typically an educational package is designed and priced at full incremental cost plus some contribution to university overhead. Cost includes an instructional fee to the faculty who participate. The fee is sufficiently high to make it competitive with outside rates.

Insofar as the teaching schedules can be arranged (and they usually can) so that they do not interfere with other teaching duties, the faculty man is able to pick up in his spare time extra pay for teaching in a familiar field which makes participation in

the programs attractive to most of them.

Let us suppose that the School has accepted the program, is promoting it, and has arrived at a satisfactory rate of remuneration for the participating faculty. Let us now take a look at this situation from still another point of view. Let us look at it from the viewpoint of the effectiveness of the School, the efficiency of the faculty, the public relations of the School, and the impact on the regular academic program and on the future of the graduates of the School.

Some schools, North Carolina among them, attempt to set up and market adult education programs through trade associations. The argument for doing this is very simple. It is that of efficiency and economy. A trade association has a paid executive staff, has channels, has mailing lists, has ways to get members to work together, and not a great deal of effort is required to train the members to handle many of the educational chores connected with the program. The association can take over the entire publicity and promotional function, it can handle the budget and take the financial risk, and it can set up the necessary machinery for serving student needs while at the university. This leaves to the School its primary function of educational counseling, program design, instruction, and research.

An instructor of a trade group is in fact a group consultant. When an accountant, instead of selling his services to one company, sells them to a group of 30 or 40 companies, his impact is far-reaching.

Management development programs conducted through cooperation of university and trade associations are particularly adapted to the needs of the smaller enterprise. Small businesses shy away from the high cost of an individual consultant. The economy of the group approach is an attractive substitute.

A program designed to assist the top

management of a smaller enterprise in handling its problems must employ an approach to any particular problem that is holistic because it is the job of top management to coordinate all the functional activities into a going concern. Regardless of which one of the seven functional fields is being considered, the relationships to the other functions necessarily have to be a part of the consideration.

Of the seven functional fields (that is to say, general management, sales, finance, production, personnel, control, and relations) the accountant has a special competency in and information about the control function. When instructing a group of business executives in the nature of the control function, he necessarily has to approach it from the over-all or top management point of view, which is one of receiving and evaluating information from all the functional fields. Unless the accountant develops an understanding of the other functions and the problems found there, he will experience great difficulty in setting up an adequate control system. This is a different relationship from the one where an outside company hires an accountant to come in and conduct an audit, certify a statement, or prepare an income tax return. His job of group consultant requires more than the usual legalistic or conventional approach to accounting.

As an accountant continues this kind of work, he begins to shift his thinking and becomes able to understand and to be concerned with all the aspects of the business.

This kind of experience is apt to have a profound effect on his academic teaching. The usual accounting problems in an accounting course are now seen in their total context. Some of the new type of thinking and new points of view will spill over and illuminate the problems so that they will be presented to his academic students in a more comprehensive setting.

As a result of this training in broader

management thinking, his students will have a different employment possibility when they leave the school. If he goes into industrial accounting, the young accountant will more quickly understand what he is doing, his relationship to the whole, and he will be able to talk more intelligently with management anywhere along the line. Consequently he is apt to earn promotion more rapidly. If he goes into public accounting, he will be able to understand the other problems of businessman clients, to talk intelligently about them, to attract new accounts, and to strengthen the public relations of his firm.

There has been a dearth of outside management consulting services for small businesses. To some extent the banker and the lawyer have filled this function, but no one is in a better position to do so than the public accountant. He is already in contact with the business and sees its figures.

The graduate accountant is now able, because of his new type of training, to see stories in the figures he never saw before, to raise leading questions, and to put his finger on weak spots in performance which lie behind the figures.

The move to broaden the services rendered by the public accounting firm beyond that of the traditional CPA functions has been growing for some time and has been urged by officers of your association and other accounting groups. At a recent AMA Seminar in New York on the financial problems of the small business the subject of getting along with your bank and of being able to get a good line of credit was discussed. The point was made that it is good practice to bring your accountant with you to see the banker, because it gave the banker increased confidence that your reports and your records meant what they said.

I asked that the group be polled on the question of how many businesses use their

accountants in other than a strictly accounting capacity. Well over half of the thirty-six to thirty-eight men there said that they use their accountants in other work than strict accountancy.

To summarize: At present the contract with the School calls for the faculty accountant to carry no more than the customary or conventional load. Any other work that he does for the School is considered to be a new contract in which the School competes for his free time with other earning possibilities. Now that many schools are accepting a part in the management development movement and are organizing and selling educational programs on a cost-plus basis, they are able, by using the group approach to consulting, to compete with other earning opportunities of the faculty.

The group consulting approach has several advantages. It increases the effectiveness of the accountant, it increases the extent of his impact on the business community, it helps the public relations of the business school, and, more importantly, it changes the outlook and the thinking of the accountant about the accounting function. He begins to understand better business problems in other functional areas, and becomes able to think analytically and diagnostically in terms of top management. This kind of experience affects his academic performance. His students receive a broader and a deeper view of the accounting and control functions. When they graduate they are probably more promotable in industrial accounting. If they go into public accounting they are resources which the firm can use to broaden their services to their clients beyond that of the usual audit and tax work.

Now as far as you accept the validity of the argument advanced, you will have to participate in the resolution of an important issue. Accounting training on the academic level will have to be broadened



which will mean at a sacrifice of some of the hours devoted to drill and to technical specialties. In the practice of accounting, however, a knowledge of and skill in handling the detail of technical specialties is needed and must be learned.

The real issue is whether or not the accounting profession has been demanding too narrow an academic base and could be well advised to let the schools provide a broader base and accept for themselves an increased participation in training in the necessary technical knowledges and skills after the student has been employed.

Business schools are now discussing this issue not only in connection with accountancy but in connection with other functional fields as well. In contrast with the organizational pattern which makes the School a federation of "shops" each giving training in a narrow specialty, there is a growing effort to reconceive and redesign business schools to be primarily oriented toward an education which will prepare students for growth in management. Mastery of specific procedures and operating details is, from this point of view, better left for fill-in on the job.

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## SOME OBSERVATIONS ON THE BREAK-EVEN CHART\*

A. W. PATRICK

*Professor, The University of Tennessee*

A PLANNING TOOL which has long been at the disposal of accountants and business managers is break-even analysis. Its virtues have been widely disseminated, and occasionally one may encounter some individuals who seem to have as much faith in the power of the break-even chart as did the patrons of the potions sold by the old traveling medicine show. Others have accepted break-even analysis as a useful tool but have been less panegyric in their discourses on the subject.

The several assumptions which underlie the conventional break-even chart are of such a nature as to make imperative the exercise of caution in using it as a basis for decision making. Unless these assumptions are thoroughly understood, its use may lead one to incorrect conclusions.

The conventional break-even point may be determined by solving for  $R_b$  in the equation  $R_b - V - F = 0$ , where  $R_b$  is break-even revenue,  $V$  is total variable cost at break-even sales,  $F$  is total fixed cost, and 0 represents zero profits and losses. In the conventional break-even chart the total cost line at the lower extremity cuts the  $Y$  axis at the point where costs are fixed and production and sales are zero. From this point it slopes upward to the right. Revenue is also represented by a linear line which originates at the zero intersection of the  $Y$  and  $X$  axis and slopes upward to the right; it is often presented as a 45-degree line. The point at which the total revenue line crosses the total cost line is

known as the break-even point, and at this level of production and sales the firm allegedly will have neither net income nor net loss.

### CHARACTERISTICS OF THE CONVENTIONAL BREAK-EVEN CHART

Some of the assumptions which underlie the conventional break-even analysis for a manufacturing situation are as follows:

- (1) Costs are either fixed or variable, or at least they can be so classified for purposes of this analysis.
- (2) Fixed and variable costs are clearly separated.
- (3) Selling price is constant regardless of the level of output.
- (4) There is one product, or a constant sales mix if more than one product is involved.
- (5) Production and sales are equal, and as a result all fixed costs incurred in the period covered by the analysis will be deducted from revenue realized in the same period.

On the basis of the last assumption no consideration is given to the situation where production and sales may not be equal and hence to the possibility that some of the fixed costs may be deferred in inventory, some may be included in cost of sales, and the portion attributable to idle facilities may be charged against revenue as a period loss.

If the assumptions as outlined above are reasonably valid, the analysis may be helpful in making some managerial decisions. On the other hand, the mathematical results of a cost-volume-profit computation can be no more reliable than the assumptions upon which the computation is based. None of the outlined assumptions may invalidate the usefulness of the analysis in a

\* This paper was presented at the Tenth Annual Meeting of the Southeastern Section of the American Accounting Association, Louisiana State University, March 21, 1958.

particular situation. On the other hand, it is conceivable that in another situation they may be such as to cause the results to be misleading. Although all of the assumptions may be questionable, attention in this paper is focused on one: that production and sales are equal, under which condition all fixed costs are charged against revenue in the period in which such costs are incurred.

Break-even analysis is usually thought of as a short-run concept and probably will be found to be more useful in short-run planning than in long-run decision-making, since the forecast of revenues and expenses tends to become more unreliable the longer the period covered in the projection. Professor Neuner writes:

Break-even analysis and charts must be kept current and not attempt to reflect probable operating circumstances over a period longer than a year because not only the mixture of variable cost and income elements may change but also fixed costs gradually shift over extended periods of time.<sup>1</sup>

It has been suggested that a break-even chart is essentially a picture emphasizing long-run average total costs, but most useful for "short-run" decision-making. The writer is dubious of the usefulness of break-even analysis if a "long-run concept" is attached to it because in the "long run" all factors may change. This would mean then that the older break-even chart would have to be discarded and a more current one prepared. This would appear then to be *prima facie* evidence that break-even analysis must be essentially a "short-run" concept.

✓ A cost-volume-profit analysis is primarily concerned with current or future expenses and revenues and not with past costs deferred in inventories. Neither does it conventionally assume that any current production will remain in inventory, but

rather attempts to portray the profit or loss position which will result if planned production is manufactured at the projected costs and is sold at the projected sales prices.

Quite clearly, some current production may be sold during the period, and some of it may remain in inventory. In some periods this divergence between production and sales may be of no significance, and this possibility represents the general position taken in discussions of break-even analysis. For example, W. L. Fill has stated that:

Inventories, though, are usually very small in comparison to total production and, for practical purposes, are ignored in computing sales at various levels of production. . . . The least probable error . . . is obtained by disregarding the inventory problem in determining sales at any volume and to consider all production immediately salable.<sup>2</sup>

Glenn A. Welsch, although noting that synchronization between production and sales is "frequently of little consequence within any one period," does point out that:

In case of a lack of synchronization between production and sales it is important that adjustment be made for the increase or decrease in inventory. In this connection it is important that variable factory costs be related to production, whereas selling and administrative variable costs should be related to sales activity.<sup>3</sup>

It is possible for a divergence between production and sales to be of some importance. National income statistics indicate that inventories in the aggregate are at times built up and at other times are reduced. If an inventory does arise out of current production, an appropriate amount of costs incurred must be deferred (not funneled through the income statement until the goods are sold).

<sup>2</sup> W. L. Fill, "Break-Even Chart," *THE ACCOUNTING REVIEW*, April, 1952, p. 203.

<sup>3</sup> Glenn A. Welsch, "Construction and Uses of Break-Even Analysis," *Controller*, October, 1953, p. 465.

<sup>1</sup> John J. W. Neuner, *Cost Accounting* (Homewood: Richard D. Irwin Company, 1957), p. 790.

## DETERMINATION OF PRODUCT COSTS

That only the effective portion of fixed costs<sup>4</sup> are product costs and hence should funnel through the income statement in this form is a widely-held accounting theory. From this follows the proposition that fixed cost of idleness (activity variation loss) is a period charge and should be carried directly to the income statement. This theory is consistent with the theory of normal burden which asserts that the amount of burden attributable to a unit of product at the "normal" volume of activity is the same that is attributable to it at any volume of activity. Break-even analysis, as conventionally presented, makes no provision for the deferral of fixed costs in inventories, since it assumes that production and sales are equal.

Some accountants have advocated a change to an accounting method which would yield results similar to those determined in a break-even analysis. They have argued that fixed costs are time costs and not product costs; therefore, the total of such costs should be charged against revenue in each period. This treatment has been called "direct costing," even though the term is a misnomer.<sup>5</sup> This, of course, is tantamount to saying that the wage of a laborer who operates a lathe in producing goods is a product cost, but that a proportionate part of the cost of the lathe is not a product cost, simply because the cost of the lathe does not vary with the output of the lathe. As Schlatter and Schlatter have put it "the exclusion of fixed costs from costs of product is incorrect in theory no matter what arguments of expediency may be advanced for it."<sup>6</sup>

<sup>4</sup> The effective portion of fixed costs refers to that portion which has been utilized in producing goods.

<sup>5</sup> "Direct costing" is better described as "variable costing" since under "direct costing," not only would "direct" costs be absorbed into product, but also variable indirect manufacturing costs.

<sup>6</sup> Charles F. Schlatter and William J. Schlatter, *Cost Accounting* (New York: John Wiley & Sons, Inc., 1957), p. 473.

For some internal purposes, it may be useful to prepare an income statement from the "contribution to fixed costs" point of view. But such a treatment cannot be justified on the premise that fixed manufacturing costs are time costs and therefore are not product costs. An attempt to do so must lie in the realm of fancy and not in economic reality.

The theoretical objection to direct costing has not been especially pursued in break-even analysis. Yet, one may reasonably inquire as to the meaning of "break-even" if it does not imply that revenues equal expenses incurred in realizing revenues at an activity level described as break-even volume. If production is more or less than sales and if all fixed costs are charged against revenue each period, as may be implied in the conventional break-even analysis, expenses will not be properly matched against revenues.

## CURRENT EXPENSES AND BREAK-EVEN CONDITIONS

Since the analysis will probably be more useful if it reflects only current or future expenses and current or future revenues, let us examine, with the aid of the following data, the break-even point without regard for beginning inventories (past costs):

*Burden Budget*

Practical Capacity = 10,000 direct labor hours or 1,000 units of product

	Total	Rate
Fixed Costs.....	\$30,000	\$3
Variable Costs.....	20,000	2
	<u>\$50,000</u>	<u>\$5</u>

*Current Manufacturing Costs (per unit of product)*

Material and Direct Labor.....	\$100
Burden—10 hours @ \$.	50
	<u>\$150</u>

*Selling and Other Expenses*

Fixed.....	\$9,000
Variable.....	15 per unit sold
Selling Price per Unit.....	\$200

From these data, break-even sales will be found to be 600 units determined by the conventional method with use of the formula:  $PQ_b - V_v Q_b = F$ , where  $P$  is the sales price per unit,  $Q_b$  the break-even sales units,  $V_v$  the variable cost per unit, and  $F$  the total fixed costs. When known substitutions are made the equation becomes  $\$200 Q_b - \$135 Q_b = \$39,000$ .

The implication of this result is that only at a production and sales level of 600 units will the firm's expenses and revenues be equal. Conceivably, there may also be an implication that a profit may be realized if production exceeds 600 units or that a loss may be realized if sales are less than 600 units.

These implications are not borne out, however, under accepted theories of income determination. An output of 950 units with sales of 300 units will also yield no profit and no loss as is demonstrated below:

Sales (300 units @ \$200)				\$60,000
Less: Cost of Sales (300 units @ \$150)				\$45,000
Selling and Other Expenses:				
Fixed			\$9,000	
Variable (300 units @ \$15)		4,500	13,500	58,500
Operating Income				\$ 1,500
Less: Activity Variation Loss (50 units @ \$30)				1,500
Net Income (Loss)				-0-

As a matter of fact, there are numerous combinations of sales and production which will yield no profit or loss. Thus, instead of there being only *one* break-even point, there is in reality a break-even line. This condition is illustrated in Chart 1. Line *GBH* is the break-even line and any combination of sales and production along this line is a break-even combination.

The break-even line will always run through the conventional break-even point. This line will also cross line *IC* (maximum production vertical) where the gross margin is sufficient to cover the selling and other expenses, since at maximum

production there will be no activity variation loss.

Point *H* can be determined by the formula:

- (1)  $NP - CN - S_v N - S_f = 0$ , when  
 $N$  equals number of sales units  
 $P$  equals sales price per unit  
 $C$  equals manufacturing cost per unit of current production  
 $S_v$  equals variable cost of selling and administrative expenses per unit of sales  
 $S_f$  equals fixed selling and administrative expenses.

When known substitutions are made, equation (1) will appear as follows:

$$\$200N - \$150N - \$15N - \$9,000 = 0, \text{ and when solved, } N = 257 \text{ units (rounded).}$$

Since *GBH* is a straight line and since points *B* and *H* have been computed, it is easy to extend line *BH* upward, thus establishing point *G*; therefore, there is no need to compute this point mathemati-

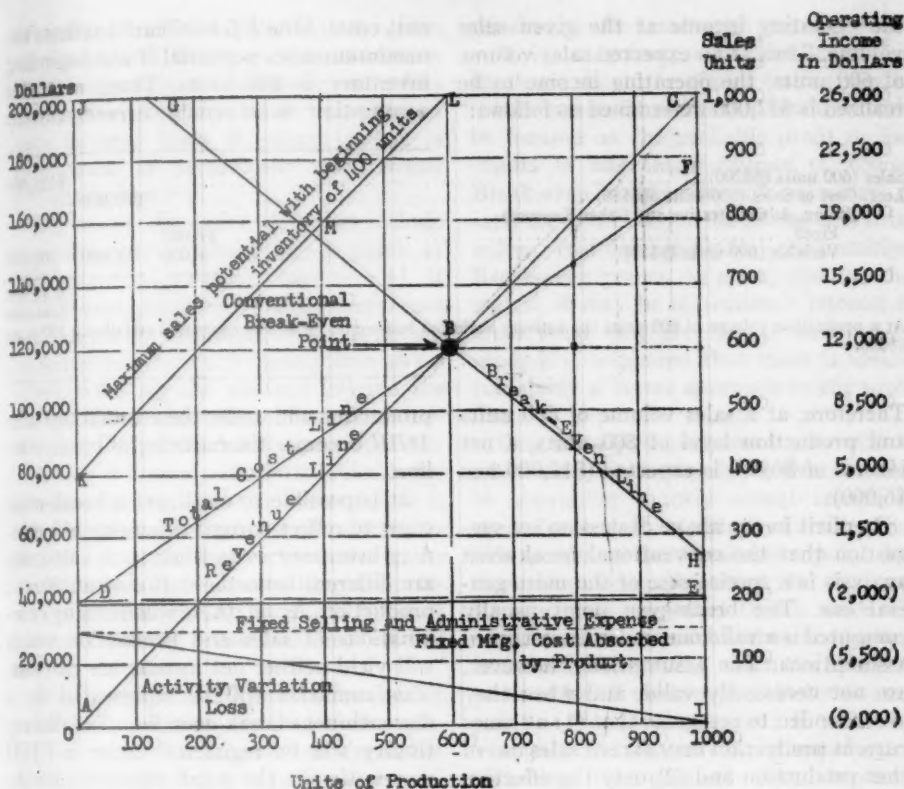
cally. It might be noted, however, that if this line were extended to cross the zero production vertical, it would intersect the latter at the point where:

$$\text{Units sold} \times (\text{unit sales price} - \text{"normal" manufacturing cost per unit}) = \text{total fixed manufacturing costs} + \text{other fixed expenses treated as period charges.}$$

Line *GB* will probably be of little or no use since any combination of sales and production along line *GB* implies a beginning inventory, i.e., sales exceed production along this line. Line *ABC* is the revenue line in a conventional break-even chart, but in Chart 1 it serves to show the

# Break-Even Chart

577



(30) (27) (24) (21) (18) (15) (12) (9) (6) (3) 0

Activity Variation Loss in Thousands of Dollars

CHART 1. Break-even chart.

maximum sales potential this period out of current production. The triangular area *AJC* is therefore of no significance in appraising the results of this period's activities under the assumption that there is no beginning inventory. Any combination of sales and production falling within the area *ABHI*, but not on line *BH*, will yield a net loss; whereas, any combination of sales and production falling within the area *BCH*, above line *BH*, will yield a net profit.

It is possible to determine from the

chart the estimated profit or loss at any combination of sales and production. To accomplish this, the income or loss realized before subtracting the activity variation loss (for brevity, referred to hereafter as operating income) should be inserted on the *Y* (vertical) axis at the various levels of sales. In addition, the activity variation loss should be inserted on the *X* (horizontal) axis at the appropriate levels of production. To estimate the profit or loss, the activity variation loss at the given production level should be subtracted from



the operating income at the given sales volume. Thus at an expected sales volume of 600 units, the operating income to be realized is \$12,000 determined as follows:

Sales (600 units @\$200).....			\$120,000
Less: Cost of Sales (600 units @\$150).....		\$90,000	
Selling, Administrative and Other Expenses:			
Fixed.....	\$9,000		
Variable (600 units @\$15).....	9,000	18,000	108,000
			<u>\$ 12,000</u>

At a production volume of 800 units the activity variation loss would be \$6,000 computed as follows: 200 units @\$.30.

Therefore, at a sales volume of 600 units and production level of 800 units, a net income of \$6,000 is expected (\$12,000 less \$6,000).

Implicit in the above discussion is a suggestion that the conventional break-even analysis is a special case of the more general one. The break-even point usually computed is a valid one under its restricted assumptions. The assumptions, however, are not necessarily valid, and when they are extended to recognize that (1) at times current production may exceed sales out of that production and (2) only the effective portion of fixed costs are assigned to product, the break-even point is found to be only one such point among many.

#### PAST COSTS DEFERRED IN INVENTORIES

Up to this point, the discussion has dealt only with current or future costs. Past costs deferred in inventory have not been considered. It, therefore, should be obvious that the results of operations for the current period as reflected by the accounting records will not necessarily agree with those indicated by the break-even analysis to the extent that beginning inventories (carried at costs different from current costs) were sold during the period. If beginning inventories are taken into account, the figures will probably be more useful for decision-making if they are priced at cur-

rent costs. Line *KL* on Chart 1 reflects the maximum sales potential if the beginning inventory is 400 units. Thus, with this assumption sales could exceed current

production and under these conditions line *MBH* becomes the meaningful break-even line.

It is possible to construct a break-even chart to reflect current expensing of beginning inventory costs when such unit costs are different from the unit cost of current production. Again, there will be many combinations of sales and production which will yield neither net income nor net loss. This condition will be represented by a discontinuous break-even line. The discontinuity will be registered under a FIFO assumption at the point where the break-even line crosses the horizontal sales line representing the amount of beginning inventory, since it is at this point that a change in relationship between cost of sales and sales occurs. This break-even line may be computed by determining the pertinent points through use of algebraic equations, and it may be computed under any assumption of cost flow as well as of activity used in establishing the burden rate.

#### SOME CONCLUDING REMARKS

It has been the objective of this analysis to focus attention on restrictions of one of the assumptions underlying the computation of the conventional break-even point. The chart presented purports to be nothing more than a graphic presentation of cost-



volume-profit relationships. With the given sales price and the given cost structure, the net income or net loss to be realized at any combination of sales and production may be read from it when income is determined in accordance with sound accounting theory.

The above discussion does not include any assumption concerning a price at which the final inventory may be sold. It is, of course, possible to make assumptions based upon detailed studies. But it should be recognized that such assumptions necessitate extending the analysis beyond the current accounting period. Such an extension may be valid if all the pertinent factors are considered sufficiently reliable for decision-making. If the sales maximum in the current year were 500 units, the *future* market, among other factors, should be studied carefully before reaching a conclusion to produce at any level, much less at the conventional break-even level of 600 units.

It is doubtful, even when the break-even point *per se* may be used in decision-making, if it is the best approach to a problem. A firm does not desire to realize zero profits, but rather it is interested in knowing the probable profit or loss of alternative courses of action and whether or not that profit is sufficient to provide the required rate of return. It is suggested, therefore, that a knowledge of differences in profit may serve management better than a knowledge of differences in break-even points.

Presumably, management is constantly striving to maximize its net income or minimize its net losses (perhaps sometimes in the short run, perhaps sometimes in the long run). If a knowledge of the break-even point is a prerequisite to management's efforts to "squeeze" costs, then management would seem to lack an understanding of its responsibility. It should be trying to maximize the return on investment re-

gardless of the break-even volume.

It is, therefore, concluded that less emphasis should be placed on the specific break-even point and that attention should be focused on the probable profit or loss results of alternative courses of action. Break-even points are not necessary in arriving at intelligent decisions which involve cost-volume-profit relationships. Break-even points do exist; and for this reason, it may be of academic interest to know what they are. But if they can be used, it is suggested that there is almost invariably a better approach to the problem.

Occasionally, management may wish to make use of a day-by-day reference point in appraising quickly actual results of operations relative to planned results. For this purpose, the break-even point has sometimes been advocated. In this connection, it is suggested that a more significant reference point is the one planned, rather than the one at which the firm purports to break even, unless the break-even point is the planned point. If sales, for example, are greater than planned sales, assuming the planned cost structure, management may regard this as "good" but if sales are less than planned sales, this may signal a review of the situation. On the other hand, a knowledge of the fact that sales were more or less than the conventional break-even sales, if the conventional break-even sales are not the planned sales, is not nearly as meaningful as is the knowledge that actual sales deviated from planned sales and in what direction they deviated.

If a "point" is considered important to management in its study of operations, it is contended that a "satisfactory point" is the significant one and not the break-even point as such. If the break-even point is important, it is because management considers that operations at no loss is satisfactory for the time in question. The break-

even point at a particular time may be a "satisfactory" one, but in the course of events other points will more often be the "satisfactory" ones. It is concluded, therefore, that in emphasizing an operating point for decision-making, the point receiving such emphasis should be a "satisfactory" one when all pertinent factors are considered.

It is hoped that the chart as presented above may help integrate the results obtained from a conventional break-even chart with those obtained when production and sales diverge. Break-even charts should be accompanied with detailed budgets and used with considerable caution only when the assumptions underlying the charts are thoroughly understood.

Of more importance, however, is the placing of emphasis in planning on the relative profitability of alternative courses

of action rather than on the break-even point. Neophytes should not be led into thinking that the break-even point is the best approach to a problem if it cannot be so demonstrated. Should one set about to compute a break-even point, he should recognize whether or not a knowledge of the point is pertinent to a decision faced by management and if it is pertinent, in what way. Many textbooks give rather elaborate discussions of techniques for computing the break-even point followed by numerous problems which require its determination. If, however, this specific figure can be used in decision-making, this use is left to the student's imagination. In classroom presentations of the break-even point and accompanying chart, the instructor should stress the assumptions upon which the computations are based and the resulting limitations of their usefulness.

# LEASING AND FINANCIAL STATEMENTS\*

GORDON SHILLINGLAW

*Assistant Professor, Massachusetts Institute of Technology*

THE growth of leasing as a means of financing corporate requirements for plant and equipment has imposed on the accounting staff the task of studying the profitability of lease and sale-leaseback proposals. In applying the techniques of differential cost analysis and time discounting of future cash flows the analyst has had to abandon the idea that annual rentals are simply another kind of annual operating cost. He has had to recognize the fact that the alternative to leasing is ownership, the necessary funds for purchase of ownership rights to be provided from sources generally available to the company.

For purposes of a simple lease-or-buy analysis, ownership costs can be divided into two categories, one representing depreciation of the facilities and the other reflecting the cost of funds used to acquire and support continued ownership of the property. Viewed in this light, it is clear that part of the annual rental is actually a financial expense and not a cost of the facilities as such. The remainder of the rental may be regarded as a partial repayment of the "loan" represented by the lessor's advance of the purchase price of the property, roughly similar in concept to depreciation of acquisition costs.

This has raised two questions for the accountant in preparing financial statements for public reporting and possibly for internal reporting as well. First, should the financial expense component of the rental

payment be segregated from the repayment-amortization portion? Second, should some recognition be made on the balance sheet of the company's contractual liability for future payments under the lease? The purpose of this paper is to examine these questions and to propose a method for bringing accounting reports into line with the economic facts of the lease.

## ANALYZING THE LEASE-OR-BUY PROBLEM

A decision to lease a building or piece of equipment is a decision to forego a current cash outlay for the purchase of rights to use the property and instead to substitute a series of future cash payments during the period of the lease. If the property is purchased, the cash payment gives the purchaser an infinite series of user rights. If the property is leased, on the other hand, the rights cease at the termination of the lease contract. In analyzing the lease proposition, therefore, any value attached to user rights after the end of the lease term must be treated as a cost of the lease.

To illustrate, assume that a building can be purchased for \$1,000,000 or leased for 30 years at an annual rental of \$85,295. All costs of operating, maintaining and insuring the building will be paid by the user whether he leases or buys. The estimated resale value of the building at the end of 30 years is \$400,000. To simplify the presentation, all calculations will be performed without provision for income tax effects, although in practice the effect of differential tax payments must be considered. The time table of differential cash flows is as follows (minus signs indicate cash outlays):

\* Thomas M. Hill, Myron J. Gordon and Tsvi Ophir of the School of Industrial Management made many helpful comments on earlier drafts of this paper.

Period	Buy	Lease	Buy—Lease
0	-\$1,000,000		-\$1,000,000
1		-\$ 85,295	+ 85,295
2		85,295	+ 85,295
...			
30		- 85,295	+ 85,295
Salvage	+ 400,000		+ 400,000
Total	-\$ 600,000	-\$2,558,850	+\$1,958,850

This time table dramatizes the nature of the lease. By agreeing to a series of future payments and relinquishing rights to any end-of-lease residual values, the lessee can avoid a current expenditure of \$1,000,000. Or, to put it the other way around, by purchasing now the buyer can avoid the payment of \$85,295 a year for 30 years and can retain the rights to any residual value at the end of that time.

The cost of leasing (or, alternatively, the rate of return resulting from ownership) can be computed by finding the interest rate that will discount the total of the future outlays to a present value equal to \$1,000,000. The rate that will do this in the example above is 8%. This can then be compared with the cost of funds from other sources, one of which may be to forego certain internal investment projects in order to provide the funds for purchase of the building.

Once the lease is negotiated, the lessee assumes a responsibility for future payments. This responsibility gives rise to a liability of the lessee, a liability that is not now reflected on the balance sheet under currently-accepted accounting practice. At best, annual rentals and the number of leased properties is indicated in a footnote to published financial statements. Many companies do not report the existence of leases at all. The remainder of this paper is concerned with finding a way of incorporating the facts of outstanding leases into financial statements, following principles now in use for other liabilities of the firm.

#### LEASE CAPITALIZATION FOR BETTER REPORTING

##### *Accounting for Long-Term Debt*

Because leasing may be regarded as a method of debt financing, we should look at methods of accounting for long-term debt for indications of how leases might be handled on the financial statements. When rights to the use of property are obtained through purchase with funds provided by borrowing, the asset is capitalized at cost and the liability is valued at the net proceeds of the sale of the issue. (For purposes of this discussion we can assume that the net proceeds from the borrowing are equal to the purchase price of the property.)

In many cases bond discount is shown on the asset side of the balance sheet, either as a separate item or included with deferred charges, and the face value of the bonds outstanding is shown on the liability side of the balance sheet. Most accounting textbooks recommend, however, that bond discount be shown as a contra account to face value on the balance sheet. Under this treatment the balance sheet liability at the date of borrowing is equal, by definition, to the present worth of the future payments under the bond indenture, discounted at the effective yield rate of the specific bond issue. For example, if a \$10,000,000 issue of 5%, 20 year bonds is sold for net proceeds of \$9,398,000, the cost or yield rate is the rate that will discount future payments of interest and repayment of principal to a present value of \$9,398,000, or 5.5% in this example. Turned another way around, the effective liability of \$9,398,000 can be found by discounting future interest payments of \$250,000 every six months for 20 years and \$10,000,000 20 years from now, at a discount rate of 5.5%.

In the case of the self-amortizing loan, similar to the ordinary home mortgage loan

in common use today, a fixed sum is paid each period during the term of the loan, this sum to pay interest and a partial repayment of the principal of the loan. For example, if \$10,000,000 is borrowed at an interest rate of 5%, annual payments of approximately \$802,427 for 20 years will be sufficient to repay the loan and pay 5% interest on the unpaid balance each year. During the first year \$500,000 of this payment is interest and the remaining \$302,427 is repayment of principal. During the second year, the unpaid balance is only \$9,691,573 (\$10,000,000 less \$302,427) and the interest component of the annual payment is thus only \$484,579, leaving \$317,848 for reduction of the liability. The effective interest rate is 5% through the period of the loan and the effective liability is gradually reduced. The final payment of \$802,427 at the end of 20 years will consist of \$764,216 liquidation of the debt and \$38,211 interest on the debt outstanding during the final year.

Looking at this transaction from the other end, the present effective liability can be computed by discounting the 20 future payments of \$802,427 each at an interest rate of 5%. The present worth of this annuity is \$10,000,000, which is the amount borrowed.

#### *The Liability Value of Lease Debt*

Borrowing by means of a lease is quite similar to the self-amortizing loan. At the beginning of the lease the lessee has the right to use facilities equivalent to a given sum of money. He agrees to pay a fixed sum to the lessor each year during the term of the lease. When the lease expires he no longer has any debt and he no longer has any right to use any of the money originally borrowed. The difference between the two situations, of course, is that the lease instrument does not specify a rate of interest, nor does it state the amount of

funds initially provided by the lessor. These amounts must be computed from the facts of the transaction.

As in the case of the self-amortizing loan, the amount of the liability is the present worth of the future payments under the contract, discounted at the effective rate of interest in that specific liability.<sup>1</sup> The effective interest rate in a lease is equal to the cost rate or rate of return that we found by analyzing the relationship among alternative purchase price, annual lease payments and end-of-lease residual value. This is the cost of the funds borrowed and this is the rate at which future lease payments should be discounted to determine effective liability at the inception of the lease. In our example, the rate was 8% and the liability for 30 future payments of \$85,295 each is \$960,240.

Of the items that enter into the calculation of the effective rate, current purchase price and end-of-lease salvage value are not specific elements in the formal contract and must be estimated. In a sale-leaseback transaction, of course, the sale price of the property is an integral part of the lease transaction and can be audited. In other instances, the lessor may be willing either to lease or to sell, at the customer's choice, in which case the alternative purchase price is easily obtainable. But no matter what the circumstances, leasing is almost always an alternative to owning and the appraisal of the lease proposal will require an estimate of the price the lessee would have to pay to purchase the same or comparable facilities. The difficulties in the way of obtaining an estimate of alternative purchase price are not great and the

<sup>1</sup> Balance sheet capitalization of the lease has been suggested by John H. Myers, "Presentation of Long-Term Lease Liabilities in the Balance Sheet," *THE ACCOUNTING REVIEW*, July 1948, pp. 289-295; also Albert H. Cohen, *Long Term Leases: Problems of Taxation, Finance and Accounting* (Ann Arbor: University of Michigan Press, 1954), pp. 108-140. Cohen also supports the method presented in this paper.



resulting estimates will generally be auditable.

The other unknown in the calculation of the effective lease cost rate is the value of ownership rights in the leased facilities at the end of the lease term. An estimate of this amount must also be incorporated into the profitability evaluation, but this estimate generally cannot be audited. Although it is true that estimates of end-of-lease ownership values are subject to error, fortunately these estimates do not exert any material effect on lease cost rates for leases that extend 20 or 30 years into the future.

#### *The Asset Value of the Lease*

If the lessee's liability under a lease is to be shown on his balance sheet, an offsetting amount must be included among the firm's assets. Does the signing of a lease give the lessee an asset and, if so, at what value should this asset be capitalized?

In order to answer these questions we must examine the nature of balance sheet assets. When a firm acquires ownership of a specific property, what it really acquires is the right to use and dispose of this property. It is not as important that we acquire goods or services as it is that we acquire the right to use them for various lawful purposes. A drill press accompanied by a requirement that it not be used by the purchaser would have little value. Thus it is the rights inherent in ownership for which we purchase property and incur costs.

By entering into a lease the lessee acquires the right to use the leased property for a specified period of time. In many cases the lessee is empowered to sell a part or all of this right by subleasing or assigning the lease. The only significant right that the lessee does not acquire is the right to any residual value the user rights may possess at the end of the lease term.

From this it can be seen that the valua-

tion problem is one of determining the portion of the total current value of the property that is represented by user rights during the term of the lease. To be more specific, what is the cost to the lessee of the rights that he acquires with the lease? This cost can be computed by subtracting from the alternative purchase price of the property the present value equivalent of ownership rights at the end of the lease. In our earlier example, estimated end-of-lease market value of the property was \$400,000. The present worth of this sum, discounted at 8%, is \$39,760. Subtracting this from the \$1,000,000 current market value of the property indicates that the lessee is paying \$960,240 for the right to use the property for 30 years. It should come as no surprise to note that this is just equal to the effective liability that we have calculated for the lessee. If the lessee is willing to promise to pay future sums in order to obtain user rights for a specified period of time, and if the lessor is willing to sell these rights in exchange for the lessee's promise, then the liability assumed by the lessee is the best possible approximation to a cost value of the user rights acquired. The accounting entry to record this transaction on the lessee's books is:

Rights to leased property.....	\$960,240
Liability under lease contracts.....	\$960,240

Thus the essence of the method of accounting for leased property that is supported in this article is to enter the capitalized value of future rental payments in the lessee's balance sheet, both as a liability and as an asset. The liability represents the requirement to make future payments under the lease; the asset represents the cost of the rights to use the property during the period of the lease.

The reader may at this point object to the use of the word "cost" to describe the value that is being assigned to the asset. He will probably say that there is no cost in the accounting sense of the term because

no ownership transaction has occurred to give rise to a cost. There is another side to this argument, however. Although it is true that what we ordinarily mean by "cost" is the sum of cash outlays made in order to acquire goods or services, a more fundamental definition is that cost represents the sum of values given in order to obtain certain rights. Sometimes we acquire ownership rights to property without an exchange of cash. The most common instance of this is the acquisition of assets in exchange for capital stock of the acquiring company. In this case outlay cost has to be approximated, either by appraisal of the physical assets or by estimates of market value of the stock issued.

In the case of a lease, the consideration given for the right to use property is the assumption of an obligation to make periodic payments to the lessor in the future. This is essentially the same as borrowing the same amount and using the funds to purchase user rights for a specified period of time. The only difference between the cost of the user rights, thus defined, and the cost of the ownership rights to the property is the present worth of end-of-lease salvage value. This is the only significant right that is not acquired in the signing of a lease and it is only proper that the present value of this right should be deducted from acquisition cost. Thus, although the valuation basis suggested here is not outlay cost it is an approximation to cost. And although this approximation to cost is based in part on estimates that cannot in most instances be audited, the estimates are subject to no greater range of error than when property is acquired in exchange for capital stock and in fact may be considerably less. In our illustration, the present value of residual ownership rights is only \$39,760. At an 8% interest rate, an error of \$100,000 in the estimate of end-of-lease salvage value would produce an error of only \$9,940 in the value

of the user rights. Furthermore, to exclude from the balance sheet the property rights accompanying the lease is a far greater error than the relatively slight error that will result from estimating the cost-equivalent value of those rights by the methods described above.

#### AMORTIZING THE LEASE

The second problem connected with the capitalization of lease rights and obligations is to provide a mechanism for breaking out the interest expense portion of the annual rentals and for amortizing initial asset and liability values over the term of the lease.

The overwhelming majority of corporations now amortize the cost of depreciable property either by the straight-line method or by some declining balance method. Bond discount or premium can be amortized either on a straight-line basis or on a constant percentage yield basis. Self-amortizing loans are handled generally on the banker's basis, which is the constant percentage yield method. Under this method, the effective rate of interest is constant throughout the life of the bond issue. In single-maturity debt sold initially at a discount, the indicated net book liability rises gradually through amortization of the discount as the maturity date comes closer and closer. If the debt is of the self-amortizing type, each periodic payment is divided explicitly into two components, for interest and repayment of principal, respectively. Each period's interest expense is computed as a fixed percentage of the unpaid balance at the beginning of the period. Amortization of principal is greater in the later periods than in the early periods.

Amortization of a capitalized lease liability could proceed along similar lines. For example, if the initial liability of the lease is capitalized at \$960,240, representing an 8% lease with end-of-year payments of \$85,295 a year for 30 years, the first year's interest expense is 8% of \$960,240,

or approximately \$76,819. The remaining \$8,476 of the first year's payment is applied toward a reduction in the outstanding liability, which then becomes \$951,764. The second year's interest expense is 8% of this amount, or approximately \$76,141, and the remaining \$9,154 is debt amortization.

The result of this amortization procedure is to produce, at any balance sheet date, an indicated book value of the liability equal to the present worth of the remaining future lease payments, discounted at a rate equal to the initial capitalization rate, 8% in this illustration.

The constant yield method can also be used to amortize the capitalized value of the lessee's rights to use the leased facilities. Because the initial capitalized amount and the amortization period are the same for the asset as for the liability, the amortization in each period under this method is equal to the debt amortization component of the annual lease payment. There are various ways of computing this, but probably the simplest way of presenting it here is to say that the annual amortization charge represents the difference between the year-beginning and year-ending present values of the remaining future payments for user rights. For example, we found the approximate cost of the 30-year user rights to be \$960,240. This is the present worth of 30 future annual payments of \$85,295. The approximate cost of user rights for 29 years is obtained by finding the present worth of 29 future annual payments of \$85,295, or \$951,764. The portion of the original cost approximation that expires during the first year of the lease is thus \$8,476, and the accounting entry is:

Expiration of rights to leased property.....	\$8,476	
Rights to leased property.....		\$8,476

The debit is an operating cost of the period and the credit represents a reduction in capitalized net asset value. The credit

might be made to a contra account, as in the case of company-owned facilities, but little would be gained by this procedure.

The alternative to this method of amortization is to compute the annual write-off of the asset by the straight-line or declining balance methods in use for the depreciable assets owned by the lessee. The effect of this would be to increase the amount of the amortization in the early years of the lease and decrease it in later years. For example, the first year's write-off under the straight-line method would be one thirtieth of \$960,240, or \$32,008, and under the double-rate, declining-balance method, \$64,016.

There are two arguments that might be advanced in support of the straight-line or declining balance method. First, it is consistent with the methods used to amortize other long-life assets. As we pointed out above, the capitalized value of fixed property is the cost of acquiring the right to use and dispose of that property. As the value of this right expires with the passage of time, a portion of the initial cost is written off as depreciation, generally by a straight-line or declining-balance method. To be fully consistent with this we should use the same method in amortizing the approximate cost of user rights under lease contracts. But consistency has two sides. Straight-line or declining-balance amortization is completely inconsistent with the method used to determine asset value in the first place, and this argues for amortization by the constant yield method.

Second, faster amortization during the early years of life is in accord with the pattern of economic values. Although proof of this proposition is spotty, it is generally believed that economic value, as represented by market exchange value, declines more rapidly in the early years than in the later years of an asset's life. This argument is irrelevant here, however, because what we are amortizing is not the

market value of a bundle of ownership rights but instead the approximate cost of user rights. The actual value of these rights to the user may be far in excess of their cost at the time of acquisition and indeed must be if the use of facilities is to be profitable. The cost of the rights is represented at any point in time by the capitalized value of the payments that must be made to secure them. Imperfections in the market for used capital facilities which result in a market undervaluation of future user rights should not be permitted to influence the rate of amortization of the approximate cost of those rights.

In any event, asset and liability should be amortized by the same method so as not to alter reported income and reduce net worth in comparison with present methods of accounting for the lease. In our example, annual rental payments of \$85,295 are now charged to expense each year (rentals on manufacturing facilities may pass through inventory accounts before reaching the income statement but the inventorying effect generally will be slight). If the constant yield method of amortization is used on both the asset and the liability, the same total will be charged annually to expense, whereas if the straight-line method is followed for the asset alone, the total income charge will differ from \$84,295. If, on the other hand, the lease liability is also amortized on a straight-line basis, the total income charge would be unaffected by the capitalization of the lease. These points are borne out in the following table:

First-Year Expense	Constant Yield Amorti- zation of Asset and Debt	Straight- Line Amorti- zation of Asset Only	Straight- Line Amorti- zation of Asset and Debt
Asset amortization . .	\$ 8,476	\$ 32,008	\$32,008
Interest expense . . . .	76,819	76,819	53,287
Total . . . . .	<u>\$85,295</u>	<u>\$108,827</u>	<u>\$85,295</u>

If different methods of amortization are used for the asset and the liability, the

book liability for the lease will always exceed the book value of the asset. This is illogical inasmuch as both values relate to the same contract and both arise initially from the same underlying data. Furthermore, such a treatment can be regarded as distorting reported income, as illustrated in the table above, and the dual amortization rates can therefore be rejected.

The main question, however, is whether the amortization of both the asset and the liability should be scheduled on the basis of the constant yield method or the straight-line or other method used by the lessee in calculating depreciation charges. The constant yield method is the only one that is fully consistent with the basis on which lease rights and lease obligations must be capitalized and thus is logically superior to any alternative. Furthermore, no other method will provide a meaningful balance sheet valuation of the lease liability. Therefore, the constant yield method is recommended in this paper for the amortization of the approximate cost of the user rights as well as for amortization of the lease liability.

#### LEASE RENEWAL AND CANCELLATION

Many lease contracts contain provisions for modifying the duration of the lease by exercising either a renewal or a cancellation option. Should options of these kinds influence the methods used to amortize the asset and liability associated with the lease?

If the lease is capitalized on the basis of the initial term of the lease, both the asset and the liability will be completely amortized as of the date of renewal no matter whether straight-line or constant yield amortization is used. At this point the lessee has the option of renewing this lease, leasing alternative facilities, buying this or alternative facilities or reducing the total amount of facilities used. If the lease is renewed it can be assumed that management has examined the profita-



bility of leasing the property and has found it to be adequate. In making this evaluation, it will have to consider the purchase alternative explicitly just as it did when the initial lease was signed. There is no difference in principle between an initial lease and a renewal, although the estimates of alternative purchase price may be more difficult to make. Therefore, the lease renewal is not sufficiently different to justify a change in method.

Lease cancellation prior to the expiration of the lease term, however, is a different matter. The suggested amortization methods are designed to amortize the initial capitalized amounts over the term of the lease. Prior cancellation will leave unamortized balances on both the asset and the liability sides of the balance sheet, balances which should then be removed from the balance sheet. If the same amortization method has been used for the asset and the liability these balances will be equal and cancellation will merely result in an offsetting entry to clear the accounts. No reported capital gain or loss will result from lease capitalization. If different methods of amortization are used, however, the balances will not offset each other and there will be a capital gain or loss.

It will probably be objected that no capital gain or loss can be realized because there is no capital asset in an ownership sense of the term. Actually, the situation is not entirely dissimilar to an ownership capital loss or gain in that both arise as a result of incorrect estimates as to the appropriate rate of cost amortization. If depreciation is too rapid, a capital gain will result, whether or not the facilities are owned or leased. This capital gain or loss, however, is purely a product of the methods of amortization. This is true for capital gains or losses on many kinds of owned property, of course, but in the case of leased facilities the means of eliminating any such effect are readily available—

identical amortization schedules for asset and amortization—and this constitutes one more argument in support of using the same method for amortization of both aspects of the lease.

#### PROBLEMS OF LEASE CAPITALIZATION

The primary purpose of lease capitalization is to provide a more complete indication of the debt position of the lessee. It also serves to include among the assets an approximation to the amortized cost of user rights to leased facilities. By segregating the interest component in the annual rental a greater degree of income statement comparability among firms with different ownership-leasing structures can be achieved. But the main advantage of the proposed method is that it presents a more meaningful statement of the liabilities of the firm.

The method is not without its difficulties, however. One group of problems center around the data required to compute the capitalized value of the lease. Some of these have already been discussed, but two that we have not yet touched upon have to do with the length of the capitalization period and the treatment of fluctuating rentals under participating leases. The second group of problems consists of a number of arguments made in opposition to the entire concept of lease capitalization. Brief discussion of these problems is desirable at this point.

#### *Participating Leases*

Many leases, particularly in food and variety chains, provide for a participating feature in which the lessee guarantees a certain minimum rental plus a given percentage of gross revenues or gross profit. Leases of this kind pose a particularly difficult problem to the accountant who wishes to capitalize lease values on the balance sheet. For a solution of this problem we must refer to the purposes



which lease capitalization is designed to fulfill. If, as was stated above, the purpose is to provide a meaningful indication of liabilities, then capitalization should be on the basis of minimum rentals only. For any period in which the participation clause results in rental payments in excess of the minimum, this excess should be reported as a financial expense of the period.

The use of the minimum rental basis will almost undoubtedly understate the approximate cost of the user rights to the property. Some leases are said to be drawn on the assumption that the minimum rental will cover total construction costs, leaving the participation percentages to take care of the risk and capital cost components of the interest charge. But the fact remains that the long-term contractual liability of the firm is represented by the contractual minimum. Furthermore, the inclusion of percentage rentals in the capitalization base introduces an additional estimation requirement into the calculation and errors in this estimate will ordinarily have a far greater effect on capitalized value than errors in estimated end-of-lease ownership value. For these reasons it seems safer to use minimum rental values rather than expected actual rentals, recognizing that this will make the resulting asset values somewhat less useful for capital return purposes.

#### *Length of the Capitalization Period*

In the exposition of the method we have assumed that the duration of the lease should be used as the time period for capitalization of future lease payments. This might be called into question if the period of estimated profitable use is shorter than the term of the lease or if the lease has no set terminal date but rather is cancellable on specified notice by either party. In the former case the capitalization period might be shorter than lease life and in the latter it might be longer. In neither case,

however, will the primary purpose of lease capitalization be satisfied if the capitalization period is different from the length of the lease.

Take the case of shorter useful life, for example. It may be decided to enter into a lease for a longer period than the expected useful value of the user rights because the profitability of the facilities in the early years will be more than adequate to offset rental payments for underutilized facilities in the later years of the lease. When the facilities are no longer useful (for example, when a baseball team moves its franchise to another city before its stadium lease expires) the lessee still has a liability for future lease payments. This liability is a significant fact that must be recognized on the balance sheet, which it will not be if the shorter capitalization period is used.

Probably the difficulty in seeing this position stems from a confusion of lease capitalization with estimation of the value of user rights. As indicated above, the value of user rights should always be in excess of their cost, value being defined as the capitalization of the earnings that can be produced with the aid of the user rights. If this value is not greater than the cost of the rights the lease should not be negotiated. But as with any other asset, the value of user rights to leased property will change. If this value falls materially it may be desirable to write off the unamortized cost of the rights faster than the amortization of the liability. This suggests one circumstance in which the amortization of the asset might proceed at a different and faster rate than the amortization of the liability. After all, facilities purchased with borrowed money may be written off prior to the maturity of the debt if their useful life is found to be shorter than originally anticipated. These circumstances would probably justify an exception to the conclusion reached earlier that both the liability and the asset should be amortized by

the same method and at the same rate. Fortunately, the exception is probably necessary only in rare cases, but it is a possibility that should be kept in mind.

In the case of the lease indefinite as to term, on the other hand, the lessee's liability is extremely limited. If he decides that the user rights no longer have adequate value to him he can terminate his liability quickly, subject only to any termination settlement imposed by the lease. In this case probably the only capitalized liability should be the estimated termination settlement plus rentals for the interval between notification and withdrawal from the property.

#### *Possible Effect on Financial Position*

Lease capitalization has three effects on the presentation of the firm's financial position. First, by increasing total reported liabilities it increases the debt/equity ratio. Second, by increasing total reported assets it decreases the profit/asset ratio. Finally, by shifting a portion of annual rentals into the financial expense section of the income statement, it increases reported operating profit and the operating profit/net worth ratio.

The result of the first two of these changes may influence the willingness of outside investors to lend additional sums or purchase additional shares of stock. Capitalization of lease liabilities may come as an eye opener to some investors although most of the large institutional lenders and financial intermediaries are sufficiently aware of the nature of lease liabilities to take them into consideration even without lease capitalization. Even here, however, existing financial reports do not provide the investor with an adequate basis for calculating effective lease liabilities.

If the ability of the lessee to attract funds is lessened at all it will probably be because institutional lenders are frequently

under a certain amount of pressure to defend their lending policies before stockholder groups or government supervisory agencies. It is probably easier to defend a loan to a borrower whose apparent debt ratio is well within conventional rule-of-thumb limits than a loan to a borrower who is exceeding these limits. Some companies, particularly in the food chain group, would show some phenomenal changes in apparent debt ratios if lease liabilities were capitalized.

Nevertheless, this argument against lease capitalization cannot be permitted to stand. The same arguments could be made for not reporting any other kind of liability. The question is one of disclosure or partial concealment. Lease capitalization does not create liabilities where none have existed before; it merely adds them up and places them in a prominent place. And liabilities should be kept out in the open for inspection, not ignored or buried in footnotes.

The effect of lease capitalization on the operating profit/assets ratio will depend on the relationship between the cost rate of the lease debt and the operating profit/asset ratio before reflecting the lease capitalization. As with other types of debt financing there is a trading-on-the-equity aspect of the lease. Lease capitalization reflects this in part by adding back to operating income an amount equal to the effective cost of the lease debt times the amount added to assets. In our earlier example, an 8% lease adds \$76,819 back to operating income during the first year by shifting this portion of the rental to financial expense. The amount added to assets is \$960,240 at the beginning of the year and \$951,764 at the end of the year. If the ratio between operating income and operating assets was greater than 8% before capitalizing the lease, then lease capitalization will reduce the indicated operating profit ratio, and vice versa.

This may have some bearing on such matters as rate regulation, excess profits tax computations and so forth, although this is by no means certain. The ratio of net profit to net worth will not be affected, of course, and the ratio of operating profit to total assets will be decreased by lease capitalization. If these ratios are used in regulatory proceedings, the standard ratios might be altered to allow for the effects of lease capitalization. On the other hand, if the standard ratios have some definite meaning either in logic or in law, then there is even more reason for lease capitalization in order to bring reported ratios more closely into accord with actual facts. We must return once more to the fact that a liability exists and financial statements that fail to disclose this liability are incomplete and may be misleading.

Lease capitalization might possibly have one other effect on the financial position of the lessee. One of the factors that reduces the effective cost of the lease is that the full amount of the rental is deductible for income tax purposes, and anything that might defer tax deductibility for a portion of the annual rental would increase the cost of the lease and impair the firm's current cash position. Lease capitalization, however, does not change the nature of the transaction; it merely reports it more fully. The amount capitalized is not the full purchase price of the property (which is the amount that should be capitalized under time purchase arrangements) but rather the approximate cost of the user rights. There is no reason to assume that the Internal Revenue Service would take any different view of the lease than it does now if it were clearly capitalized on the basis described above.

#### SUMMARY

In recent years the lease has grown in popularity as a device for financing the acquisition of productive property. The

lease is a form of debt that does not appear on the balance sheet under current accounting practices. The omission from the balance sheet of the lessee's liability under long-term leases results in an understatement of the debt position of the firm and makes it more difficult to compare the financial position of firms that choose different means of asset financing.

There is, fortunately, a sound basis for capitalizing the lease on the balance sheet. When the lessee enters into a lease, he obtains an asset and assumes a liability. The amount of the liability is the present worth of the lessee's future payments under the lease, discounted at a rate of interest equal to the effective percentage yield-to-maturity cost of the lease financing device. The full value of the asset depends on how effectively the lessee puts the property to work during the period of the lease, but its cost is the sum that is given up in exchange for user rights. This cost can be approximated by subtracting from the alternative purchase price of the property the present worth of the end-of-lease ownership value. This net amount is also equal to the capitalized amount of the lessee's liability under the lease, so that the accounting entry to record the negotiation of a lease fits logically and neatly into the double entry bookkeeping system. These asset and liability values can then be amortized over the term of the lease in such a way as to leave net reported profit unchanged, but with a portion of the annual rental payment diverted to interest expense from the operating cost section of the income statement.

It is maintained in this paper that this method of lease capitalization and amortization is entirely consistent with existing accounting principles for the valuation of assets and liabilities. The major point in dispute is whether the proposed method is in accord with the principle of valuation at cost, and it is maintained here that it is.

The problem in deriving cost is to separate from the purchase price of a piece of property that portion of the price that is paid for end-of-lease ownership rights. In the case of most leased property this portion will be relatively small and in long-term

leases of 20 years or longer will be virtually negligible. But in any event it is better to accept a small range of error in approximating cost than it is to ignore the value of the user rights by omitting them from the balance sheet.

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Jacksonville State  
Johns Hopkins University  
Long Island University  
Los Angeles State College  
Loyola University  
Macalester College  
Marquette University  
McCann School of Business  
McGill University  
Montana State University  
Ohio University  
Portsmouth Interstate Business College  
Providence College

Queens University  
Quincy College  
Reid CPA Coaching School  
Rider College  
Roosevelt University  
Sacramento State College  
St. John's University  
St. Norbert College  
San Diego State College  
San Francisco State College  
State Teachers College  
Syracuse University  
Tennessee Polytechnic Institute  
University of Akron  
University of Buffalo  
University of California



University of Cincinnati  
University of Denver  
University of Idaho  
University of Minnesota  
University of New Mexico  
University of Pittsburgh  
University of Puerto Rico

University of Tennessee  
University of Toledo  
University of Tulsa  
Wake Forest College  
Washington State College  
Washington University  
Wayne University

West Liberty College  
West Texas State College  
West Virginia University  
Wright Jr. College  
Xavier University  
Bowling Green State University

## 5-10 Members

Abilene Christian College  
Akron University  
Alabama Polytechnic Institute  
Anderson College  
Ashland College  
Bradley University  
Burdett College  
Canisius College  
Casper College  
Centenary College  
Central Missouri State College  
Colorado College  
East Washington College of Education  
Fairmont State College  
George Washington University  
Golden Gate College  
Goldey Beacon College  
Hofstra College  
International Accounting Society  
Kansas City Jr. College  
Kent State University  
LaSalle College

Lehigh University  
LeMoyne College  
Los Angeles City College  
Louisiana State College  
McNeese State College  
Metropolitan Business College  
Miami-Jacobs College  
Morton Jr. College  
Northeastern University  
Northern Illinois State College  
North Park College  
Oregon State College  
Pan American College  
Rockhurst College  
Rutgers University  
St. Louis University  
Siena College  
Southern Illinois University  
Southern Methodist University  
Southwest Missouri State College  
Stanford University  
Stetson University  
Texas A & M

Texas Christian University  
Texas Technological College  
Tulane University  
University of British Columbia  
University of Chicago  
University of Connecticut  
University of Dayton  
University of Georgia  
University of Kansas City  
University of Kentucky  
University of Maryland  
University of Mississippi  
University of Nebraska  
University of Oklahoma  
University of Omaha  
University of Oregon  
University of Rhode Island  
University of Rochester  
University of Scranton  
University of Tampa  
University of Wyoming  
Upsala College  
Valparaiso University

## Less than 5 Members

Alabama State Teachers  
American International College  
American University  
Antioch College  
Arizona State College  
Arkansas State  
Army Audit Agency  
Auerswald's Accounting & Secretarial School  
Austin Peay State College  
Baltimore College of Commerce  
Baylor University  
Birmingham Southern  
Bob Jones University  
Bowdoin College  
Butler University  
Canal Zone Jr. College  
Capital University  
Carnegie Institute of Technology  
Central Michigan College  
Central State College  
Centre College  
Cleary College  
College of St. Thomas  
College of Steubenville  
Concord College  
Cornell University  
Creighton University  
Dallas College  
Del Mar College  
Delta State College  
Detroit Institute of Technology  
Dixie College  
Drexell Institute of Technology  
Duquesne University

East Carolina College  
Eastern College of Commerce & Law  
Eastern Michigan College  
Eastern Nazarene College  
Elizabethtown College  
Elon College  
Evansville College  
Fenn College  
Fresno State College  
Franklin & Marshall  
Gannon College  
Geneva College  
Gettysburg College  
Grambling College  
Greenville College  
Harding College  
Healds Business College  
Heidelberg College  
Hitotsubashi University  
Idaho State College  
Illinois Institute of Technology  
Ithaca College  
Jersey City Jr. College  
Little Rock University  
Long Beach City College  
Long Beach State College  
Loras College  
Louisiana Polytechnic Institute  
Manhattan College  
Marietta College  
Maryland State College  
Maryland University  
Memphis College of Accounting  
Memphis State College

Michigan College of Mines  
Millikin University  
Mississippi State College  
Mohawk Valley Technical Institute  
Montana State College  
Moravian College  
Morningside College  
Mount Allison University  
Mount St. Mary's College  
Murray State College  
New England School of Accounting  
Odessa College  
Oklahoma Baptist University  
Oklahoma State University  
Pacific Southern College  
Paducah Jr. College  
Penn. Military College  
Phoenix Evening College  
Pierce Jr. College  
Randolph Macon College  
Regis College  
Ricker College  
Ricks College  
Russell Sage College  
St. Bonaventure University  
St. Edward's University  
St. John Fisher College  
St. Joseph's University  
St. Mary's University  
St. Philip's College  
St. Thomas College  
St. Vincent College  
San Diego Jr. College  
San Jose Jr. College

Santa Ana Jr. College  
Seattle University  
Seton Hall University  
Skagit Valley Jr. College  
The Sobelsohn School  
Southeastern Louisiana State College  
Southern State College  
Southern University  
Southwestern College  
Spring Hill College  
Stephen F. Austin State Teachers College  
Susquehanna University  
Sydney Technical College  
Texas A & I  
Thammasat University

Thorton Jr. College  
Union College  
U. S. Air Force  
University of Alaska  
University of Arizona  
University of Baltimore  
University of Bridgeport  
University of Chattanooga  
University of Delaware  
University of the East  
University of Hawaii  
University of Houston  
University of Iowa  
University of Kansas  
University of Massachusetts  
University of Nevada  
University of Notre Dame

University of Richmond  
University of Santa Clara  
University of South Carolina  
University of Virginia  
University of Wichita  
Ursinus College  
Victoria College  
Virginia Polytechnic Institute  
Walsh Institute of Accounting  
Washington & Lee University  
Washington & Jefferson College  
Western Carolina College  
Western Michigan College  
Western Washington College  
Wheeling College  
Wichita University  
Woodbury College

## SOME NOTES ON PRODUCT-COMBINATION DECISIONS\*

ROBERT K. JAEDICKE

Assistant Professor, Harvard University

ONE of the important classes of decisions facing the manager of a business firm is the one pertaining to the best combination of products to produce and sell. In fact, Scitovsky has listed the three basic decisions facing the firm as follows: "... (1) how to produce; (2) how much to produce; and, if it produces several products, (3) what combination of products to produce."<sup>1</sup> As important as this class of decisions is to the firm manager, if he were to turn to existing accounting techniques and accounting literature for a complete and definitive answer he probably would be quite disappointed. There are many accounting techniques and concepts—direct costing, break-even analysis, and the contribution margin concept—which are pertinent to the problem of product combinations. These concepts certainly furnish a starting place in making managerial decisions; however, each of them is quite incomplete in itself.

Such inadequacies in accounting have led some authors to criticize accounting very harshly. Goetz points out, "In today's cost system, classifications and evaluations tie into and support the legal-financial data of balance sheet and income statement, instead of tying into and supporting the activities of management."<sup>2</sup> However, Goetz also points out in the same article, "The materials and techniques are all at hand. All we need is sufficient courage to

shake off the shackles of tradition."<sup>3</sup> In applying Goetz's challenge to product-combination decisions, it appears that what is needed is a decision-making model which will set forth the theoretical principles to be considered. This model should then serve as a guide in solving the measurement and reporting problems created by its practical application in a specific situation. To describe such a model, using accounting techniques, is the purpose of this article.

In the development of a model for product combinations which might utilize accounting data, one starting point is to examine the literature of economics. Marginal analysis, as used by the economist, can be applied to the problem of the best combination of products. If the firm produces two products, A and B, whose market prices are respectively \$10 and \$8, profit is maximized by pushing production to a point where the marginal cost of the products is equal to the marginal revenue. However, it may be helpful to present this analysis in a somewhat different manner. The following analysis is taken primarily from Scitovsky.<sup>4</sup>

In Figure 1, the quantities of products A and B have been plotted on the co-ordinate axes. In this diagram several price lines have been drawn, the slope of which depends on the ratio of the market prices of the products. These price lines, called *isorevenue* lines, show the various combinations of products A and B that will bring the same revenue. For example, the *isorevenue* line labeled R1 illustrates the various combinations of A and B that can be sold for R1 amount of revenue. In Fig-

\* This article was written while the author was a member of the faculty of the School of Business Administration of The University of Minnesota. Its completion was facilitated as a result of a Ford Foundation Grant to The University of Minnesota.

<sup>1</sup> Tibor Scitovsky, *Welfare and Competition* (Chicago, 1951), p. 122.

<sup>2</sup> Billy E. Goetz, "Tomorrow's Cost System," *Advanced Management*, XII (December, 1947), 172.

<sup>3</sup> *Ibid.*

<sup>4</sup> Scitovsky, *op. cit.*, pp. 134-137.

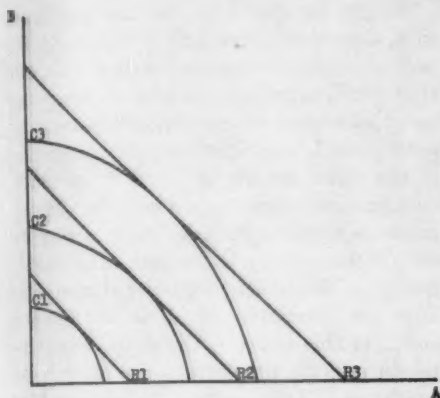


FIG. 1

Figure 1, R3 is greater than R2 which is greater than R1.

Also plotted in Figure 1 are a series of cost lines (C1, C2, and C3) showing the different combinations of A and B that can be produced at a given cost. In Figure 1, C3 is greater than C2 which is greater than C1. Scitvosky refers to these curves as product-transformation curves "... because traveling along the curve would amount to keeping production costs unchanged and transforming one product into the other, that is, increasing the output of one at the expense of the other."<sup>6</sup> Hence, the slope of the transformation curves at any point gives the marginal rate of transformation between A and B (in symbols MT), and this rate is equal to the ratio of the marginal costs of the products. Thus MT is equal to  $MC_A/MC_B$ .<sup>6</sup>

The combination of *isorevenue* lines and product transformation curves can now be

<sup>6</sup> *Ibid.*, p. 135.

<sup>6</sup> To illustrate why MT equals  $MC_A/MC_B$ , the following example is given. Assume that the output of products A and B is such that their marginal costs of production are \$6 and \$4 respectively. The production of one additional unit of A would therefore add \$6 to total production costs; and to save this sum on the production of B would require lowering B's output by 1½ units. Therefore, the marginal rate of transformation between A and B is 1½:1 which is the same as the ratio of their marginal costs.

used to solve the problem of the most profitable product-mix. In order to obtain maximum profit, the firm must obtain the highest revenue from a given cost expenditure or, in other words, a given revenue from the least cost expenditure. The best position in terms of Figure 1 is where a given transformation curve is tangent to the highest price line. Thus,

$$MT_{AB} = MC_A/MC_B = P_A/P_B$$

(Where MT is the marginal rate of transformation, MC is the marginal cost, and P is the price.)

Before making any changes in this model to allow for existing accounting concepts, it may be helpful to examine some of the analytical possibilities of the model as it appears now. Notice first that a change in the combination of products is called for only if the ratio of the marginal costs or the prices change. In a joint cost situation, the accountant who advocates joint cost allocation to the products involved is on uneasy ground if the cost information is to be used in product-combination decisions. This same conclusion also holds for the allocation of any fixed common cost among products. This might be illustrated by a situation where a department store is seeking the best combination of departments. In assigning floor space to the department, the fixed building occupancy cost, the executive salaries, and other costs of this type are irrelevant to the decision at hand. Just as in the case of joint products, where the combinations may be varied, the problem is one of maximizing marginal revenue and the fixed common or joint costs are irrelevant.

To illustrate this proposition further, consider the following example. Suppose that the labor cost incurred by a firm is \$10. With this labor cost, the firm can have any of the following combinations of products A and B:

	Method 1	Method 2	Method 3
Product A.....	5	10	11
Product B.....	5	3	2
$MC_A/MC_B$ .....		2/5	1/1

Under each of the above methods, all costs other than labor costs are equal. These methods could be different production methods where the same \$10 of labor time is spent producing different products. This same example might be used to illustrate a situation where a department store can sell the above combinations of A and B with the same building occupancy cost. The methods in this case are simply different allocations of floor space. The methods of production determine the product-transformation curves used in the Scitovsky model. The combinations of products in the above table give  $MC_a/MC_b$  of  $2/5$  and  $1/1$  as the firm chooses between methods 1 and 2 and methods 2 and 3 respectively. If the ratio of the selling prices of A and B is  $4/5$  (selling price of A is \$4, B is \$5), the best combinations of products is given by method 2 which is between  $2/5$  and  $1/1$ . Since costs other than the common labor cost are equal, the problem of product combinations is one of maximizing sales value. The proper solution may be summarized as follows:

Method Number	Total Revenue
1	\$45
2	55
3	54

If a guaranteed annual wage plan is introduced which raises the cost of the same unit of labor from \$10 to \$20 (in the case of the department store, the real estate taxes may increase the occupancy cost from \$10 to \$20), the ratio of the marginal costs is unchanged; consequently, the ratio in which the products are sold should remain unchanged. This can be shown as follows:

- (1)  $MC_a(5) + MC_b(5) = \$10$   
 $MC_a(10) + MC_b(3) = \$10$
- (2)  $MC_a/MC_b = 2/5$  (ratio of the marginal costs when labor cost is \$10 per unit)

Let the cost of labor increase to \$20 per unit and the following is true:

- (1)  $MC_a(5) + MC_b(5) = \$20$   
 $MC_a(10) + MC_b(3) = \$20$
- (2)  $MC_a/MC_b = 2/5$  (ratio of the marginal costs when labor cost is \$20 per unit)

As can be seen from the above discussion, the model presented by Scitovsky for product-combination decisions points out that accounting allocations of joint and common costs to units of product are completely irrelevant and may be misleading if the data are to be used in product-combination decisions. When the department store manager asks for a profit for each department, the accountant should not give him a *net* profit per department after an allocation of all fixed common costs. If this is done, the data cannot be used to decide the correct size of each department. This same decision-making model is also useful in distribution cost analysis where the "functional" approach is used. It is useless to calculate a cost of each function in an attempt to determine the profit of a certain salesman's territory if such a cost figure includes common fixed costs. If this is done, the cost calculation will not give meaningful results in decisions regarding the proper size of territories or a decision regarding which territories should be served.

The Scitovsky model has been used to evaluate some of the problems of joint costing and cost allocation. Its application to some practical decision-making problems has shown that the model gives a correct conceptual solution and at the same time casts doubt on some conventional accounting practices. The same model might be used to evaluate many of the ideas expressed in accounting literature (or at least question the intent of the writer) such as the following:

- (1) "The assignment of indirect costs to products serves a useful purpose in making possible a clearer picture of the relative strength of different segments of business (in this case, products) and the areas where improvement is needed.

"Yet arbitrary or not, overhead must be borne (by products or other segments) and if, when indirect costs have been assigned in the manner in which management wants them to be borne, some



products appear to be 'losers,' then re-pricing of these products is truly in order, if it is at all possible."<sup>7</sup>

- (2) "Since most commodity-processing industries are highly competitive, with margins narrow and market fluctuations severe, knowledge of processing-cost data is an indispensable element in the development of sound price-making policies. Often a sequence of processing operations is involved, with the product saleable at various stages of completion. *Allocation of joint costs among the processes becomes an important factor.* The influence of volume is a vital one."<sup>8</sup> (Italics supplied)

- (3) "If the decision to make or to buy will affect an entire budget year, the cost accountant should present: (1) A statement that compares the company's cost of making the parts with the price of a vendor. The statement should include direct materials, direct labor, variable expenses caused by making the part or the tool, *a share of fixed expenses, and a profit figure.*"<sup>9</sup> (Italics supplied)

"A third reason offered for requiring a correct knowledge of joint and by-product costs is that they serve as a means of regulating production. Although in many cases it is quite difficult to control the quantity of joint products and by-products manufactured, a decision can be made as to whether or not additional labor and materials are to be expended on the newly created joint products and by-products. If management has a reasonably accurate idea of the *cost of the unfinished joint products and by-products*, a study of market conditions will reveal whether or not it will pay to spend additional money to finish the joint products and by-products."<sup>10</sup> (Italics supplied)

Up to this point, the theoretical model presented by Scitovsky has been used

without making any changes. This model works well when dealing with a true joint or common cost situation. The characteristic of the situations presented is that variable separate costs or costs beyond the split-off point in the case of joint products have not been introduced. Consequently, the ratio of the marginal costs did not change. Under such conditions, the model as presented is highly useful for analytical purposes.

However, if the situation is changed to allow for variable separate costs in a product-combination decision, the theoretical model becomes more difficult to use. Suppose that a department store is reviewing its assignment of floor space among departments and there are some variable costs which can be traced directly to each department as well as some fixed common costs. An example of the former would be the cost of the merchandise sold in the department, salaries of sales clerks, and the cost of sales supplies used in each department. An example of the latter would be the common building occupancy costs, such as real estate taxes, depreciation, or rental on the building.

If, in the above example, the variable costs of Department A rise and the price of A does not rise, the ratio of the marginal costs of A and B are changed. The store should decrease the size of Department A and increase the size of Department B in such a way that the ratios of the prices and marginal costs are again equal. To actually put the quantitative information into this model may become somewhat involved even though a conceptual solution is quite possible. The remainder of this article will be devoted to a discussion of some of the changes that can be made so that the model is somewhat easier to use. These changes attempt to build some existing accounting concepts into Scitovsky's model.

If the store manager were to ask the accountant about the department combina-

<sup>7</sup> John A. Beckett, "A Study of the Principles of Allocating Costs," *THE ACCOUNTING REVIEW*, July, 1951, 330.

<sup>8</sup> Howard Clark Greer, "Cost Factors in Price-Making," *The Harvard Business Review*, July-August, 1952, 36.

<sup>9</sup> Adolph Matz, Othel J. Curry, and George W. Frank, *Cost Accounting*, 2nd edition (Cincinnati, 1957), p. 814.

<sup>10</sup> *Ibid.*, p. 428.

tions, he might be answered in break-even analysis or direct costing terminology. The proponents of both break-even analysis and direct costing point out that one advantage of these techniques is that they show the effect of a change in product combinations on reported profits. This is done through showing the change in the profit-volume ratio or the marginal income (not marginal revenue) which is defined as sales less variable costs. The profit-volume ratio is the ratio of the marginal income to sales. Since break-even and direct costing are primarily reporting techniques they have serious limitations when applied to a decision regarding the future. However, even though they are incomplete, many of the ideas are useful.

In answer to the store manager's question, the accountant might point out that the best combination of departments depends in part on the marginal income produced by the department. Many writers refer to this idea as the contribution margin approach. This approach is criticized on the grounds that, in the long run, fixed costs cannot be ignored. However, the criticism *should* be that these techniques are incomplete. The marginal income or contribution margin is only part of the pertinent information and certainly the methods are inadequate as they stand. The missing information is the statement of production possibilities.

Turning again to economic theory, the economist has long recognized that profit maximization is a problem of maximizing the rate of return according to the scarce or limiting factor. This is a proposition that accountants often forget; it is the weakness in the contribution approach. If, in the case of the department store, the limiting or scarce factor is square feet of floor space (the scarce factor could be capital), the best combination of departments is the one which will produce the greatest total

marginal income. Each department should be judged in terms of the marginal income *per square foot of floor space*. The statement of floor space supplies the information regarding the "production possibilities."

This solution is not necessarily a short-run solution. In the long run, the store manager may ask a question regarding expansion where the limiting or scarce factor is increased. The department that should be expanded is the department which will provide the greatest rate of return per square foot of floor space (which is now to be increased). In other words, with a given additional capital expenditure, which department will provide the greatest additional return? If, in seeking a decision, it is found that the additional investment in furniture and fixtures is greater depending on which department is expanded, this might be taken into consideration as part of the marginal income calculation the same as any other separate departmental variable costs.

If product-combination decisions are approached with the contribution theory combined with a statement of production possibilities (where the solution is in terms of maximizing the rate of return per the scarce factor), the model is essentially the same as that proposed by Scitovsky. The big difference is to assume a constant variable cost per unit as an approximation of marginal cost. If the Scitovsky model is restated in terms of break-even analysis or the contribution theory, the *isorevenue* line would be replaced with an *isomarginal income* line. The product-transformation curve would simply become a statement of production possibilities given by the fixed factor of production. The best combination of products would then be given by the point of tangency of the isomarginal income line with the curve indicating the production possibilities. (Such a situation is shown graphically in Figure 2.) This

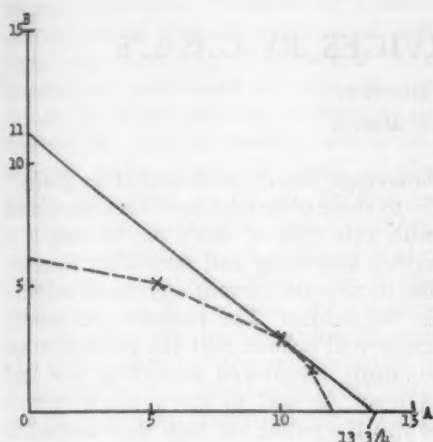


FIG. 2

point of tangency would give the maximum marginal income subject to the fixed factor of production.

	Selling Price	Variable Cost	Marginal Income	Production Methods		
				1	2	3
A.....	\$10	\$6	\$4	5	10	11
B.....	8	3	5	5	3	2

The assumption of linear variable costs is well recognized in accounting and is even supported by economists as a reasonable approximation of marginal costs in many situations. In a chapter on the cost of production, Scitovsky states "Accordingly, as long as the producer retains his method of production and stays within his normal operating range, we should expect his input of variable factors and—with given factor prices—also his variable costs

to vary in proportion with output."<sup>11</sup> By adapting the Scitovsky model to allow for this assumption, it is clear that the important considerations in product-combination decisions are the selling price of the products, the variable cost of the products, and a statement of the production possibilities given the fixed factor of production.

The variable costs which should be considered depend on the specific decision and situation at hand. It is not possible to give examples of costs which are variable because this depends on the problem to be solved. To say that direct labor is variable is entirely misleading in that the presence of a certain type of guaranteed annual wage plan might make direct labor entirely fixed. Also, the change in the labor cost might be zero if output is changed by 10 percent; if output is changed by 25 percent, the change in the labor cost might be positive. What is called for, however, is an estimate of variable costs and selling prices for each problem; if there are many alternatives, an estimate must be made for each. If certain short cuts are introduced they should be recognized as a simplification and their desirability should be measured against the conceptual solution given by the model. The fact that many possible combinations might present themselves should not be used as an argument against the model. In this day of electronic computers, a solution should be possible even though there are many variables.

<sup>11</sup> Scitovsky, *op. cit.*, p. 308.

## MANAGEMENT SERVICES BY C.P.A.'S

CLINTON W. BENNETT

*Partner, Cooley & Marvin*

PERHAPS the most significant development in the accounting profession during the last half decade has been the rapid growth of interest in management services. This is evidenced in the literature of the profession, by the frequency with which the subject appears on programs of accounting organizations and by the manner in which so many accounting firms have expanded their organizations to render this type of specialized service to their clients. As recently as the Fall of 1953 the president of the American Institute of Certified Public Accountants appointed the Institute's first committee on management services by C.P.A.'s. I was honored with a place on that first committee and I am presently serving on the current committee so I hasten to state that all opinions expressed in this article are my own and are not intended in any way to reflect opinions of the committee or of any other members of it. It so happens, however, that this subject has been close to my heart during my entire professional lifetime. The other day, in reviewing the archives in our office, I came across a communication dated February 2, 1914 announcing the opening of the public accounting and production engineering offices of Cooley & Marvin, the firm of which I am privileged to be a partner. This announcement stated the objectives of the new firm in these words: "the object is to carry on work of every nature pertaining to public accounting and production engineering, including audits, special examinations, accounting systems, cost systems, and methods relating to organization, operation and administration of manufacturing, commercial, banking, insurance,

brokerage, estate, trust, and other affairs." So to those of us who have been associated with this type of work for so long it is rather surprising and somewhat interesting to note the current upsurge of activity in the subject. The business community could well believe that the profession has suddenly discovered something new and different to add to the types of service which the public has long since learned to associate with the practice of the certified public accountant.

### *Historical Background*

The organized accounting profession of the United States may be said to have started with the formation of the American Association of Public Accountants in 1886. This was followed ten years later by the passage in New York in 1896 of the first C.P.A. law in the United States. The practitioners of those early days came to the profession from two general types of background. One might be classed as the English approach and the other the American. Following the War Between the States and the end of the ensuing post-war depression, there was ushered in a dynamic period of industrial expansion in the United States. However, there was not enough available domestic capital to finance this business expansion and therefore much of it was done with capital from abroad, notably English and Scottish. And being shrewd businessmen, these British capitalists saw to it that British accountants made periodic visits to the United States to check up on the pot of gold. Many of these accountants from abroad remained in the United States and established accounting firms of their own or, in some in-



stances, established branches of already existing foreign firms. It was natural that these men and the firms which they founded or established in this country should, in their thinking, be largely influenced by British practice which apparently looked upon the work of the public accountant as largely devoted to auditing and associated work connected with the preparation of financial statements and the bookkeeping side of the enterprise. The lure of this new developing profession also interested young men who were engaged in the commercial side of business such as banking or bookkeeping and many of them entered public accounting. Naturally their commercial backgrounds were such that their viewpoints with respect to the service of the public accountant would correspond quite largely with those of the accountants from abroad.

Interestingly enough about this same time in the 1880's a development was taking place which was to have a profound influence in industry. This was the pioneer work being performed by Dr. Frederick W. Taylor and others in developing what later became known as "scientific management." The work of these pioneers greatly affected all phases of business management and influenced the thinking and viewpoint of many young men entering the new profession of accountancy. Naturally these men in entering professional accounting work looked upon this new calling much more broadly than the men with the British or commercial backgrounds. To them the practice of accountancy included not only auditing and associated services, but also many of the broader services included in the realm of so-called scientific management. By the turn of the century there were several well established firms practicing in this broader area and by the outbreak of World War I this broader so-called American concept of public ac-

counting was receiving ever wider acceptance. The war and the rapidly expanding business activity, with associated problems, which followed in its aftermath created a greatly increased demand for these special non-auditing services with a corresponding substantial increase in the number of practitioners. At the same time the demand for the more classical types of public accounting services increased greatly and perhaps even more sharply than the demand for the more specialized types of work.

While a substantial amount of the growth that the profession was enjoying in these broader services was the direct result of demand on the part of business, a considerable amount also resulted from promotional activities. This was a young profession and it was necessary to conduct educational campaigns in order to acquaint the business community with the services that the accounting profession could render. Hence, many of the firms and particularly those who performed these additional special services engaged in advertising and other promotional activities.

In 1923 the organized accounting profession took steps to ban all types of advertising, selling and promotional efforts. There were practitioners who believed thoroughly in this restrictive action at the proper time but who felt with equal conviction that some further years should elapse before this step would be desirable. They believed that much additional educational work would be needed to properly educate businessmen with respect to the many ways in which the certified public accountants could serve them as problems of unprecedented proportions arose out of the booming and expanding economy. This minority viewpoint seems to have been justified because almost coincidental with the banning of these educational activities by certified public accountants came the great expansion of the management con-



sulting profession. It was obvious that the business community needed this broader type of service and since certified public accountants were either not providing it or were no longer in a position to acquaint the business public with the fact that they were able to do so, businessmen turned to others for assistance.

As a further indication that the early practitioners were not limited to the narrow view of the public accountant's practice, the following is taken from the 1916 edition of Montgomery's *Auditing*:

"... the auditor ... had no cut-and-dried system, nor did he know before he entered an office how its system should be mapped out, but out of long experience he was able to make suggestions which cut out unnecessary work and proposed changes which embraced the use of all the latest labor-saving devices. Then came the 'efficiency engineer,' who again modestly affirmed that the auditor was not a specialist in systems and that he could not be expected to keep his clients up-to-date. The crop of over-charged and dissatisfied patrons of the 'efficiency engineer' is commencing to be heard from, and it is believed by some who have studied the situation that before long the auditor will be back in his former position as a recognized authority on business systems.

"The auditor should keep fully informed on the latest devices, mechanical and other kinds, for saving labor or rendering it more efficient; he should understand and be prepared to explain the relation of one department of a business to another and the advantages of co-ordination; he should study cost systems and be ready to install any required accounting system; he should acquire and follow up a knowledge of the means of imparting information by means of charts and other visual methods.

"It might be urged that an auditor cannot hope to cover more than a small part of the field of auditing within a considerable period of practice, and that to expect him to add the work of a system specialist is unreasonable. The answer to this is that no one can be a good auditor without picking up all of the rudiments of systematizing, and that in any event system is a matter of evolution.

"Ready-made systems have been popular, but never successful. No system will work out well unless a good man studies the concern and be-

comes acquainted with its personnel before he starts, and then 'lives with the job' until its completion. The auditor may not be able to handle many such engagements, but he should not allow the so-called system experts to bluff him out of the remunerative work. He is probably better qualified to perform it than anyone else."

That most interesting book by my old friend W. P. Hilton of Norfolk, contains the following interesting reference:

"It is of notable interest to find, from the records, that throughout the colonial history of Virginia there was a constant trend of business prudence in the procedure of either governmental or private business affairs and that some principles of business and accounting control in use in those early days are still acceptable in similar twentieth century procedure; double-entry bookkeeping was in use, accountability for goods, collections and disbursements and the assessment for taxes was well defined and there existed a realm of authoritative control, even in spite of the delays and slow motion of sailing vessel communication with the mother-country and other outside points of contact. To add to this observation, even the segregation of funds is contemplated in a law adopted in 1684:

"... by the governor, council and burgesses of this present generall assembly . . . That for every gallon of wine of all sorts whatsoever, brandy, rum or any other spirits imported into this collony (except what shall come directly from England) . . . there shall be paid . . . the summe of three pence upon every gallon . . . Provided alsoe, that all and every summe or summes of money raised, or to be raised, by virtue of the imposition aforesaid, be constantly accounted for by the collector thereof to the auditor of Virginia for the time being, and by him to the governour, council and burgesses of the general assembly and converted to the uses by them directed according to the true intent and meaning of this act, and to or for noe other use, intent or purpose whatsoever."

An interesting management service not included in current classifications!

<sup>1</sup> Robert H. Montgomery, *Auditing Theory and Practice*, New York: The Ronald Press Company, 1916, page 390.

<sup>2</sup> W. P. Hilton, *The Growth of Public Accountancy in the State of Virginia*, Richmond: The Virginia Society of Public Accountants, 1933, p. 6.

So it would appear that the current interest in management services on the part of the accounting profession indicates the development of no new worlds to conquer. Instead it simply indicates that the C.P.A. is only getting back to the job where he should have been all along.

#### *Why the Current Interest in Management Services?*

The question may well be asked why, after all these years, the accounting profession is suddenly so much interested in management services. Basically I believe the reason is that business organizations have problems of a nature and a magnitude never encountered before. This condition is the result of many causes, all adding up to the one simple fact that many of the accountant's clients need help in areas not normally served by the certified public accountant and yet the C.P.A. is probably better equipped to provide these services than anyone else. Mention of some of these problems currently facing business managements may not be out of order.

A problem which is becoming increasingly important in many companies is that of trying to maintain profit margins. Prior to World War II it was quite common practice in most industries to operate plants on a single shift basis. As a result prices were geared to these one-shift operations. The great demand for all kinds of goods caused by the war brought multiple shifts and in the years since the close of World War II business generally has become accustomed to round-the-clock operations with costs and selling prices based on this practice. In former days of the single shift an additional rush of business could easily be handled by putting on extra shifts which in turn usually ran into increased profits rapidly because of single-shift-based selling prices. Under current conditions in most lines of business with prices and costs geared to multiple shift

operations, additional business simply means a greater squeeze on the entire organization without the probability of added profits flowing from the increased business because no additional plant capacity is available to be absorbed. Hence, any appreciable drop in the volume of business may drastically affect net profits.

Another important reason for the increasing squeeze on profits will be found in the huge expenditures for new plants and facilities that have been made since the close of World War II. Not only is there more capacity to produce in most industries, but because of improved plant design and more efficient machines and equipment, costs and resulting selling prices are being lowered. The effect of all this is that the manufacturer who has not kept pace with improvements in plant and machinery may, and probably will, find himself in an increasingly bad competitive position. Under these conditions there is frequently an urge to take business at almost any available price in order to obtain volume. In too many instances executives find themselves bitten with a bug which might be called "volumitis." The victim of this disease tries to do enough business at a loss to make a profit. It is quite a trick and yet it is amazing how many otherwise sane American executives fall victim to it.

The industrial executive in many cases finds himself squeezed between three pressure groups—(1) customers, looking for lower prices, (2) labor, looking for higher wages, and (3) stockholders, looking for greater dividends. A phenomena of the postwar years, which has created many headaches for many people, has been the battles for control of various corporations. So businessmen, generally speaking, are being faced with problems of a magnitude which could hardly be imagined only a decade ago. These are new and different

problems. They are of a type outside the experience of the usual executive or members of his organization. He must needs turn to someone outside for assistance and advice.

A major problem in industry today is the number of top executives who have never done business in a period of falling prices. Since 1933, with few exceptions, prices have either been rising or they have been relatively stable. During this long period an entire new generation of businessmen has developed. During this favorable operating span of years if a businessman made a mistake, he usually only had to wait and events would catch up and bail him out. It may well be that this condition has ended for the foreseeable future, at least. We appear to be entering the other side of the economic cycle, a period in which prices may fall as easily as they have risen previously. Because of this absence of experience, many of these executives need assistance and they must look for it on the outside.

To meet these problems the businessman must know some definite things. He must know, for example, (1) the break-even point in his business, (2) how much of his sales dollar is eaten up by (a) costs subject to control and (b) costs beyond his control, and (3) the effect of volume on costs.

This means, among other things, that the old concept of fixed and variable costs is not enough. To obtain this essential operating information the executive needs his costs split three ways. He must know (1) out-of-pocket costs—costs that vary directly with volume, (2) fixed or sunk costs—costs which will not change importantly regardless of volume, and (3) semi-fixed or semi-variable costs—costs in the area between out-of-pocket and fixed or sunk costs where any cost reduction program must usually start. Furthermore, all of this information must be available to the

industrial executive according to different volume levels.

In short, to operate successfully under conditions as they seem to be developing, the executive must have a planned program with respect to all operations and particularly must he have a budget for anticipated profits. Profits do not just happen. They have to be planned. And with the ever increasing demands on the executive's time, it is essential that he rely more and more upon the "law of exceptions" in management. This means that he must have available continuous and accurate information showing just how actual performances are comparing with planned performances. In this way the executive does not need to be concerned with activities which appear to be satisfactory but can devote his full time and energy to those problems which are shown to need attention.

#### *What Are Management Services?*

Just what do we refer to as management services? Broadly speaking any services which a certified public accountant may render to his clients beyond the customary auditing and tax practice. They fall rather naturally into three general, yet distinct classifications:

1. Services which a certified public accountant, member of recognized professional societies, should be capable of performing.
2. Services requiring specialized experience.
3. Services requiring specialized training and experience.

#### *Classification 1 could include—*

1. Internal control methods.
2. Inventory procedures.
3. Budgets.
4. Cost analysis.
5. Accounting systems.
6. Order systems.
7. Financial methods, procedures, consultation.
8. Reporting procedures, both financial and management.

9. Reorganization service.
10. Developing statistics.

The practicing certified public accountant who is qualified to be a member of his State Society should be able to render valuable service in any of these areas.

Classification 2 might include the following:

1. Office mechanization.
2. Clerical work studies.
3. Office layouts.
4. Estate planning.
5. Employee benefit plans.
6. Cost accounting.
7. Labor relations.
8. Rehabilitating a financial or trading enterprise.
9. Market and product analysis.
10. Personnel selection.

Generally speaking no special training should be required to permit the practicing certified public accountant to serve in these areas, but if he is going to do the professional job expected of him he should have had previous successful experience in doing work of these types.

The third classification might include the kinds of services tabulated below:

1. Time studies.
2. Wage payment methods.
3. Job evaluation.
4. Production planning and control.
5. Methods studies.
6. Plant layouts.
7. Standard costs.
8. Merit rating.
9. Establishing work loads.
10. Material handling.
11. Rehabilitating an industrial enterprise.

The kinds of services outlined in this third classification would usually require that the person holding himself out to perform them should not only have had experience but in most instances specialized training as well. In other words, these services do not fall within the usual range of education or experience of the certified public accountant. They are not services which are frequently included on the programs of accounting organizations or in

accounting literature. They are instead definitely of an engineering nature and could well be designated as engineering services.

While these three classifications would seem to indicate a rather broad coverage of services which the certified public accountant might be called upon to perform, they are by no means all inclusive. As an example, consider No. 11—rehabilitating an industrial enterprise. Although the problem of the sick business has not been particularly acute for some years, it is never wholly absent and may arise much more frequently with the ending of the post-war boom and the resulting greater industrial competition. Current statistics on business failures support this position. The certified public accountant who holds himself out to perform management services may well be called upon to diagnose the ills of a sick business and recommend what should be done in the circumstances. Not infrequently the sick business is not an indication of business depression but rather a symbol of progress. At every moment some business or some industry is expanding and growing while some others will be undergoing economic contraction or decay. So the problem of the sick business is one which requires an acute sense of discernment and diagnosis. Any study of this problem would include four distinct areas.

1. Production.
2. Distribution.
3. Management.
4. Economic prospects.

Certainly no opinion will be much good in working out a program unless sound diagnosis has been made in each of these important areas. What, therefore, are some of the things which should be considered in each of these classifications?

Any study of production would include—

1. Efficiency of operation.



2. Condition and kind of the machinery and equipment.
3. Is the equipment balanced between departments and operations?
4. Can the layout be improved?
5. Are work loads fair and equitable?
6. Is the wage payment program satisfactory?
7. Are costs competitive?
8. What practical steps can be taken for improvement?

The distribution study should include—

1. Sales and merchandising policies.
2. Determination of how the products compare with competition.
3. Pricing policies.
4. Competitive status.

In the management area judgment should be passed on—

1. Kind and effectiveness of the organization.
2. Capability of personnel.
3. Kind and value of current information that management obtains.

Not infrequently the economic prospects of the company may pose the most difficult and important questions. Certainly the following should be considered:

1. The industry—growing, stagnant, declining.
2. The place of the company in the industry.
3. Profit possibilities of the company.

This question of rehabilitating a sick industrial enterprise provides a rather good case study of the breadth of engagements which a certified public accountant may find himself involved in if he holds himself out to perform management services. Actually this kind of job includes all three phases of management services mentioned above, namely, (1) those which the C.P.A. should be able to furnish; (2) those which will require specialized experience; and (3) those which will require special training in addition to experience.

A second example of some of the problems which the C.P.A. who engages in management services may be called upon to handle has to do with so-called cost accounting. It will be noted that in listing

management services I have shown cost accounting as item 6 in classification 2 and standard costs as item 7 in classification 3. The reason for this is that there is a very great difference between classical cost accounting and standard costs. Modern standard costs contain about as many engineering problems as accounting problems and decisions of management must form the foundation of the entire program. On the other hand, classical cost accounting usually deals with things that have happened rather than things which may happen and accounting rather than engineering principles and viewpoints prevail.

As the squeeze on profits becomes more acute and the business organization has to scratch a bit harder to maintain satisfactory operating levels, managements, particularly of medium size, and small businesses need the kind of control information and help that can be obtained quite readily from the modern standard cost system. As an illustration of the breadth of problems which must be considered in any approach to a standard cost installation or review, the following extract from an actual report from a practitioner to his client may be of interest:

"Your detail cost and accounting work appears to have reached the point where it should be tied into and controlled by the general books of account not only to provide a constant control and proof over the accuracy of the work as compared with actual results but also, and of even greater importance, to provide management with a continuous means of controlling the current operations against a predetermined operating program. It would appear that the time has arrived when steps should be taken to make the cost program into a more useful tool for management guidance. Broadly speaking this work will involve the following steps:

- "1. Determine upon the specific program towards which management is working. In other words, set up definite budgets. This means starting with the anticipated sales by kinds, quantities and dollars and the anticipated profit to be budgeted for these sales. Budgets will then have to be



prepared for all costs and expenses and particularly for all payrolls needed to produce these results.

- "2. Revise the classification of ledger accounts to conform with the budgets where necessary and to provide adequate accounting machinery for controlling actual results and reflecting them against the budgeted results.
- "3. Set up costs for all products based upon the budgets.
- "4. Review all reports from the operating divisions to make sure that the accounting department will receive adequate information with respect to day-to-day happenings in order that the accounting control work can be properly handled.
- "5. Set up a working capital or cash flow budget based on the operating budgets referred to previously.
- "6. Provide for adequate and effective reports for periodically keeping management informed.

"To provide maximum coordination and make the most effective use of time, we suggest that the work be handled as a cooperative activity between your organization and ourselves. Everything that can be done effectively and within the time available should be performed by people in your own organization. But it must be remembered that your own people have the day-to-day jobs to do and care must be taken to make sure that neither the day's work nor the new program suffers for lack of available time and attention."

A glance at this program shows how completely the standard cost work will spread-eagle most of the various services included in the third classification suggested previously herein, all of which are more on the engineering side of the practice than on the accounting side.

A third illustration in the field of management services which the C.P.A. may encounter in his broadened practice, has to do with productivity studies. In more and more businesses management is faced with the problem of how to relate reward to effort.

How to get a fair day's work for a fair day's pay and vice versa, has always been

the number one problem in all labor management relations and the Bible tells us that "the laborer is worthy of his reward." In our complex modern society the goal must be to get more goods to more people at the lowest possible selling prices. This adds up to two simple essentials:

1. High productivity to produce the goods.
2. High wages to provide purchasing power to buy the goods.

The two go hand in hand and without one the other fails. This problem then becomes one of balance; of relating one to the other. And it is not possible to evaluate the one without the other. No wage is too high if it has been earned in profitable production of goods while the lowest wage may be too high if it will not pass this earned productivity test. How then do we solve this problem of balancing productivity and wages? The answer is—through appropriate wage incentives.

A wage incentive program for modern industry consists of three steps:

1. Set standard of performance.
2. Evaluate the jobs.
3. Determine the method of payment.

Setting standards of performance is the first and great job. This will set the work loads. Without accurate dependable knowledge of work loads the entire plan will fail. This will tell what is a fair day's work.

Step number two, evaluating the jobs, determines the hourly rate to be paid for each job. This step should evaluate the job and not the worker. The rate for the job should remain so long as the job stays the same regardless of who performs it. This will tell what is a fair day's pay.

The final step of the trilogy determines how earnings shall be paid. Usual plans are (1) money per piece, (2) money per earned hour, and (3) measured day work whereby evaluated hourly rates are paid and standards of productivity insisted upon.

These three random illustrations indicate the breadth of problems which the C.P.A. may be called upon to handle in management services practice.

### *Some Practical Problems*

Perhaps the reader may feel that my concept of management services by C.P.A.'s is exceptionally broad and I hasten to agree that this is so. But it is only as broad as management's problems. For the top executive in any industrial enterprise, regardless of its size, in these mid-century years is faced with broad and exacting problems and he must reach solutions for them as part of the day's work. Therefore, when he turns to an outside consultant, which may well be his professional certified public accountant, he naturally is going to be interested in obtaining assistance in these management problems which he believes may well fall within the experience and training of the consultant.

Now it is entirely obvious that few practitioners could be properly qualified in all of the many activities which have been listed previously. So the question facing the practitioner boils down to a very practical one of determining how to render professional services required by management. By extending his practice into the management services field the certified public accountant has a greatly increased opportunity for providing valuable assistance to his clients which they cannot obtain from anyone else. From this increased opportunity for service should naturally flow an increase in the practice of the C.P.A. But this increased opportunity carries with it commensurate dangers. The C.P.A. must never permit himself to attempt services which he cannot properly perform. We, ourselves, are the best judges of our capabilities and any attempt to undertake engagements on which we are in doubt can only lead to disaster. The client

will receive an unsatisfactory job, the C.P.A.'s reputation will be tarnished and the entire profession will suffer. In my own firm we have, and always have had, a very definite concept of our place in this broad so-called management services field. Many of these industrial activities such as production planning and control, job evaluation, time studies and wage setting, standard cost programs, plant layout and kindred activities require a combination of accounting and engineering thinking. Where accounting thinking is required, that work is performed by accountants and where the service enters the field of engineering, we assign engineers to the job. But, and this is of fundamental importance, we do not undertake any service that cannot be properly supervised by a partner of the firm. In no instance are so-called specialists engaged unless the work to be performed is something which falls within the experience and training of a partner. And so to the C.P.A. who is considering extending his practice to include management services, I would say:

1. Do not undertake any services which you do not feel entirely competent, by training or experience, to handle.
2. Do not confuse professional management services with employment services as part of the management team.
3. Do not jeopardize your independence.

Always remember that independence is governed by (1) our relationship with management and (2) our attitude of mind which we bring to the job. It is not governed by the class of service which we perform.

I have no patience whatever with those who say that because the C.P.A. performs some service for his client beyond the scope of the normal audit or tax service, he loses his independence. He can be just as independent installing a standard cost system or a system of internal control or a budgetary system, for example, as in

making an examination of the accounts and reporting upon it. In each of these instances he is performing a professional service. But if he should become involved as part of the management team by acting in the capacity of treasurer or controller or in making management decisions, then he ceases to be a professional and simply becomes just another employee. His independence vanished with the first act of this nature which he performed.

It is desirable and in the public interest that the organized accounting profession conduct educational efforts to alert the business community with respect to the many services which can be performed for management by certified public accountants. But it is important that this educational work be carefully and adroitly handled. A real danger is that the public may gain the impression that the C.P.A. is a jack-of-all-trades. Suppose that extensive publicity is given to a list of management services by C.P.A.'s, such, for example, as the three classifications which I have included previously herein. One of these releases falls into the hands of the president of a client of some C.P.A. He is impressed and probably surprised. Immediately he looks at his auditor, who may have been serving his company for many years, through different eyes. So the next time our C.P.A. friend calls on his client the client expresses his new interest and tells him that the list contains some services which he has been considering for some time, for example, job evaluation. He asks the C.P.A. when can he commence the work. Our C.P.A. friend unfortunately has never had either training or experience in job evaluation services and he tells his client so. Immediately the client wonders what kind of a C.P.A. is serving him since the organized profession broadcasts lists of services to be performed by C.P.A.'s and yet his own professional admits his incompetence. Now this is not an

overdrawn illustration. It does emphasize the danger which may easily flow to the individual practitioner and to the profession from ill-advised or improperly handled educational activities. On the other hand, it is my firm conviction that the organized profession has a duty to the public and to the members of the profession to alert the business community with respect to the broad services which can be performed by C.P.A.'s, depending upon individual training and experience. Particular emphasis should be placed on the fact that because of the wide range of work which may fall in this broad category of management services, each individual C.P.A. can and should be relied upon completely to determine his own capabilities in any specific area and to furnish advice with respect to those practitioners who are competent in areas in which he is not.

#### *Developing a Management Services Practice*

It may well be asked how does the usual practitioner or accounting firm develop a management services practice? Here, I think, care should be taken not to be too dogmatic. There is probably no best way. Certainly the thing not to do is for the practitioner to decide some morning that he is going to engage in management services, hire himself a staff of experts in various fields, and advise his clients that he is in the management services practice. This is the surest possible way of asking for trouble and ending up with plenty of it. It seems to me that the first step of the C.P.A. is to determine what are the needs of his clients and to attempt to serve in those areas that are within his firm's capabilities. Some firms have expanded their practices by taking in new partners with specialized training and experience in different areas. It is usually desirable to embark on an educational and a training program within the organization to gradually educate all members of the staff in

areas beyond the accepted audit and tax service. Much excellent literature has been appearing. Naturally, the practitioner should read the *Journal of Accountancy*, the bulletins of the National Association of Accountants and the literature put out by the American Management Association, the Controller's Institute and other organizations publishing in the general management areas. As stated above, entrance into the practice of management services should be a planned program and not a crash activity. Under the heading "Aid to Management Beyond the Audit," C. D. Brighton, writing in the *THE ACCOUNTING REVIEW*, had this to say "The question may be asked, if not the accountant, who else will provide the services management needs?" A related social question is that of whether there would be needless duplication of effort if someone else had to be called in because of lack of initiative, lack of training, or some other lack of the accountant.

The question of "who else" has two aspects. One has to do with possible competition with others who may be able to provide substantially the same service as the accountant. The most dramatic illustration of this is competition with lawyers in connection with tax practice. There is also competition with management engineers and others in what seems to be a growing field of business consultants. Probably the best way to meet competition is to render more and better services at the same or less cost than can be done by competitors. This is good practical procedure, and it is certainly the best possible social procedure.

The second aspect of "who else" is more important socially than the first. It includes a situation which for practical reasons the accountant is virtually the only qualified outside help that management has. In smaller communities this is the usual situation. Even in the larger

communities audits and tax practice create a sort of "entering wedge" so that as a matter of habit clients learn to lean on the accountant for counsel on all sorts of business problems. Consequently, in many situations there may be no one else who will advise a client on systems changes, cost accounting, better reporting, labor relations, tax planning, profit planning, and other operating and planning matters.

There appears to be much difference of opinion in the profession concerning the designation of these broader types of service. Five large accounting firms which have special departments to handle such services respectively designate these departments as (1) management controls, (2) administrative services, (3) management services, (4) management advisory services, and (5) management accounting services.

Certain organizations, including my own firm, use the term "engineering" to designate these special services which we perform.

#### *The Place of Education in the Management Services Program*

If management services are to become the important part of a C.P.A.'s practice which their value to the business community deserves, it would seem obvious that this changed concept of the job of the certified public accountant will necessarily have a most important effect on accounting education. This broadened concept will necessarily lead right back into the schools and colleges. Certainly the courses of education and the training programs generally in use will not properly educate would-be certified public accountants for the facts of life in this expanded practice. At this point I hasten to add that this statement is in no way a criticism of our educational institutions. It is simply a recognition of changing concepts and of



basic steps which will have to be taken to meet them. The standard that has been adopted for judging professional competence in the accounting profession is the C.P.A. examination. And to the extent that any examination may be accepted as a fair standard of measurement, the C.P.A. examination has proven to be an excellent yardstick. But the C.P.A. examination is based upon accounting practice in the narrow sense. The emphasis is laid upon audit and tax practice with reasonably associated activities. Since the C.P.A. examination is an important yardstick of measurement for professional accounting, its content has undoubtedly had an influence on accounting education—particularly on the material covered in some of the more specialized accounting courses.

But before the educational institutions can properly develop their accounting courses to prepare students for the practice of professional public accounting in the broader sense, the profession itself will have to determine what the practice of accountancy includes. This does not mean that it will be necessary to define public accounting with preciseness or exactness, and it does not mean that every practitioner should be expected to perform every service which might generally be included in the profession's idea of what constitutes the practice of accounting. But it does mean that a much clearer concept must be developed by the profession of the general areas in which the business community can properly look to the certified public accountant for qualified assistance and guidance. There are still too many people who believe the musical comedy concept of the accountant as a stoop-shouldered old fellow sitting in his shirtsleeves on a stool at a high desk looking through thick glasses under an eye shade. Perhaps basically that is what we are but we hate to be told so and furthermore I don't believe it's true. And there are others who look upon the

accountant, as one of our prominent practitioners once said, as a bookkeeper out of a job who drinks. When we remember what a young profession accountancy is, it is not surprising that the general public may have some false concepts of our work; in fact, it is surprising that we are understood as well as we seem to be. But in these mid-century years, with development of business and industry to present levels, it doesn't make much sense to believe that the activities and practices of the certified public accountant should still follow the restricted areas of service which were set up at the turn of the century and which, undoubtedly, properly met the problems of the business organizations of that era. This broadened concept of the practice of the certified public accountant is in effect simply keeping pace with the broadened problems of the business community in which he finds himself.

### Conclusion

Accountancy has been pointed to as the fastest growing profession. Naturally this happy situation has arisen because the business public believed we had something to offer that was of value. This public acceptance of our profession has opened wide opportunities, but these opportunities carry commensurate responsibilities. And one of the important responsibilities is the duty to the public to serve in all proper areas where we can be of service. In other words, we have a duty to accept our responsibilities as members of a grown-up and highly regarded profession. And certainly, services to management should be a generally accepted part of the practice of public accountancy. The very growth of the accounting profession was largely responsible for the narrowing of the certified public accountant's practice. There was so much demand for his services in the audit and tax fields that he neglected other services in the broader areas. But



this did not solve the problems of management. It simply meant that management had to look elsewhere for assistance and guidance. So when, as sometimes happens, the certified public accountant complains of the many services performed for

his clients by others that could be performed equally well, or perhaps better by himself, he might, with profit, think of the admonition of Cassius: "the fault, dear Brutus, is not in our stars, but in ourselves."

## COMPARATIVE PROFESSIONAL ACCOUNTANCY

MARY E. MURPHY

*Professor, Los Angeles State College*

**P**REPARATORY to the convening of the Seventh International Congress on Accounting, in Amsterdam, in September, 1957, the writer made a survey of professional organization and practice in various parts of the world. It will be recalled that the first Congress was held in St. Louis in 1904, attended by eighty-eight persons, one representing Scottish, two English and seven Canadian societies, while one accountant from Holland appeared in a non-official capacity. This attendance should be contrasted with the 1957 London Congress which was supported by 2,850 representatives of 104 societies from 35 countries.

Other International Accounting Congresses have been held in Amsterdam (1926), New York (1929), London (1933), and Berlin (1938). By the time of the Eighth International Congress, scheduled for New York in 1962, it is hoped that much more will have been written about comparative professional accountancy than exists in professional literature today. It is essential that there be greater freedom to practice accounting throughout the world. The removal of barriers to the free passage of, and practice by, accountants should be an aim of all professional societies.

International meetings in all professional fields have become part of the normal pattern since 1945, but there is something deeper, more significant than social intercourse which draws accountants together. It is the desire to ensure the widest possible exchange of principles and procedures, and to work toward the achievement of international auditing and financial reporting standards which will ad-

vance the finance and enterprise of both mature and underdeveloped countries.

In recent years Inter-American Conferences of Accountants have been held in Puerto Rico, Mexico City, Sao Paulo, and Santiago de Chile. A permanent secretariat has been established in Puerto Rico to organize future meetings and to aid in the development of standard accounting terminology in that area of the world. These conferences have been attended by the principals of large and small accounting firms, educators, technical heads of government tax authorities, and accounting or fiscal heads of departments. All of the countries of the Western Hemisphere do not require that public accountants be admitted through and regulated by a legally constituted governmental authority. In some of them, laws have been enacted prohibiting industries financed by foreign capital from having audits carried out by practitioners of their own countries.

At the first conference, convened by the Puerto Rican Institute of Accountants in 1949, a resolution was passed to the effect that those in attendance "should support any movement tending to encourage the governments of countries where adequate legislation does not exist to regulate the accounting profession in accordance with generally accepted standards of practice." Delegates from Brazil, Costa Rica, El Salvador, Honduras, Panama, Uruguay and Venezuela favored this resolution; delegates from Canada, Guatemala, Puerto Rico, the Virgin Islands and the United States opposed it; and delegates from Cuba and Mexico abstained from voting.

In spite of the fear of restrictive laws,

exchange control and expropriation, the encouragement of venture capital is especially important at the present time. The C.P.A. has a vital role in overseas finance and company management but, probably, insufficient attention has been devoted to this role in current publications. Recently the President of the New York Stock Exchange and the Editors of *Fortune* and *The Economist* singled out the diversity of accounting standards in the free world as a serious obstacle to the international flow of private investment capital.

Commercial treaties negotiated in recent years by the United States Government with a number of countries include clauses providing for the free passage of accountants, auditors and other technicians into the territories of the signatories for the purpose of making examinations and investigations on behalf of the interests of their own nationals. For example, treaties with Denmark, Greece, Israel and Japan, ratified by the U. S. Senate in 1953, contained provisions to guarantee the right of American business interests abroad to employ accountants and auditors of their own choice.

American corporate investment abroad today totals more than \$20 billion; this is enhanced by a portfolio investment of \$9 billion. The total listed above may be broken down as follows: Canada \$6.5 billion; Latin America \$6.7 billion; Western Europe \$3 billion; Middle East \$1 billion; Africa \$755 million; Australia and New Zealand \$536 million; Philippines \$226 million; India \$96 million; and other areas \$240 million.

Underdeveloped countries now receive a capital flow of \$1.1 billion annually, most of it from the United States. Private investment carries with it the technical and managerial skills badly needed by these countries. The accounting profession in the expanding countries receives direct

impetus from overseas investment, in the formation of local offices of overseas firms, affiliations of overseas partnerships with local firms, or appointments to local accounting organizations. In retrospect, it is apparent that the conception of a new country, such as Pakistan, was the force behind the establishment of the profession in that area of the world. The expansion of the profession is apparent also in the first Far East accounting conference convened in November, 1957, in Manila, with the aim of forming a society for accountants in practice in that part of the world.

At the 1926 International Congress Sir Albert W. Wyon declared: "As trade is said to 'follow the flag,' so will accountancy inevitably follow the growth of international commerce and finance." Yet Sir John Somerville, President of The Institute of Chartered Accountants of Scotland, warned at that body's Centenary Celebration (1954), "in many countries overseas the doors are shutting and the traditional outlets for Scottish Chartered Accountants are tending to become fewer." Sir John stressed that, while recognition must be given to the problems of these countries, "good relations with accountancy bodies overseas cannot only help the cause of international understanding, but will be of very direct benefit to many of our members in the future." Today about one-half of the membership of the Scottish Institute is in practice overseas; of all those qualifying, 11 per cent migrate to Canada.

Serious impediments arise, however, where restrictions based on nationality or residence are imposed, and they are not in the best long-term interests of the country which imposes them. Experience in the United States, for instance, was for Americans to learn principles and procedures from British Chartered Accountants who crossed the Atlantic in the 1880's and 1890's to audit the accounts of British-

owned enterprises. In a short time thereafter, British partnerships were established in various cities of the United States; later these partnerships were converted to American ownership and American firms of professional accountants were formed.

Today, in contrast, some countries insist that all principals and staff members employed by foreign firms should be nationals of the country in which the public accounting branch functions. As one example, in 1951 an act was passed in South Africa which prohibited partnerships and profit-sharing between accountants resident in the Union of South Africa and those resident outside the Union. It also prohibited the use of a firm name which included the name of any person who was not, or who had not been during his lifetime, ordinarily resident in the Union. Partnerships already in existence on April 12, 1951, were not to be subject to the prohibitions of this act until November 30, 1956, or such later date as would be described. Following protests by the English Institute and other societies, the South African Parliament agreed, in April, 1955, to consider an amending bill containing provisions which would be satisfactory to members of the British accountancy profession.

The Union of South Africa eventually passed a Public Accountants' and Auditors' Amendment Act, 1957, which removes (subject to certain registration and other requirements) the prohibitions introduced by the Public Accountants' and Auditors' Act, 1951, against partnerships with, or sharing of profits with, accountants not resident in the Union, and against the use of firm names not consisting of the names of persons who are or were during their lifetime resident in the Union.

The influence of an overseas accounting firm should not be underestimated by a developing country. In one case, a London Chartered Accountant partnership, in con-

junction with its associated firm in South Africa, made an investigation into the affairs of a South African goldmining company, qualifying its report on the engagement. The judgment rendered in a subsequent trial had a profound effect on the conduct of business in South Africa, with the statement made from the bench that the stand taken by the London firm as auditors greatly strengthened the position of the South African accounting profession. New legislation was later introduced in that country, many of its provisions being directly traceable to the events which the case had revealed.

Nicholas A. H. Stacey, whose history of the English accounting profession was published by Gee & Company in 1954, has proposed that an organization be set up, with Great Britain as the base of operations, to collate information concerning accounting practice abroad and to carry out professional research on an international level. This new body would publish a quarterly journal devoted exclusively to important developments in international accountancy. Although Stacey would limit his plan at its inception to a pilot scheme confined to the exchange of information between Britain, America and the British Commonwealth, he anticipates that it could later be extended to other areas.

Undoubtedly, accounting research should be viewed as an international function along the lines indicated by A. A. Garrett, former Secretary of the Society of Incorporated Accountants. Accounting research on an international basis would require frequent visits between countries by practitioners and scholars and the preparation of papers jointly sponsored by the profession and the universities in every part of the world. Certain recent setbacks, such as the seizure of the Egyptian offices of British accounting firms, should not deter the concept of a long-range plan to attain

international accounting and auditing standards and to promote the objective of freedom of practice by qualified individuals in all countries. The important issue is that professional accountants in every part of the free world must recognize the necessity of breaking down international barriers to practice, irrespective of whether these barriers are erected by dissimilarity of language, custom or code.

The international aspects of practice, over the years, have been fostered by the staffs of the large accounting partnerships which have been true colonizers in every corner of the globe, bringing their specialized talents and high ethical standards to the solution of local auditing and business questions. Far too little has been written about the pioneers of accountancy and, even today, little is known about the problems of establishing a practice overseas, training nationals and integrating them with staff members recruited abroad, working under unsatisfactory or unfamiliar conditions, and at all times seeking to sustain the best traditions of the accounting profession. These experiences are buried in the files of international firms, especially the story of the development of uniformity of standards and policies by these firms over the last seventy-five years. Because of the confidential nature of the appointments, these firms are reluctant to give details of their overseas engagements but, in some cases, they have described them in staff journals. Perhaps a certified public accountant, some time in the future, will take a leaf from the book of Ernest Cooper (see his paper in *The Accountant*, October 21, 1921), and narrate his experiences outside the United States.

Hardly a month passes without a reference to a new merger or affiliation of an American C.P.A. partnership with some overseas accounting organization. One such partnership, for instance, maintains offices in Great Britain and on the Conti-

nent, and lists affiliates in Canada, Cuba, Germany, Sweden, South America, Spain, Portugal, Gibraltar, Malta, Singapore, Federation of Malaya, North Borneo, Ceylon, South Africa, Australia and New Zealand. Lybrand, Ross Bros. & Montgomery recently announced the formation "of the international firm of Coopers and Lybrand to provide service in areas of the world outside the U.S.A. Other members of the international firm are Cooper Brothers & Co., practicing in the United Kingdom, Continental Europe, Australia, New Zealand, Belgian Congo, Central, East, South and West Africa and Singapore, and McDonald, Currie & Company, practicing in Canada. Practice in the United States will be carried on as previously by Lybrand, Ross Bros. & Montgomery."

Sir Geoffrey Heyworth, in his foreword to *A History of Cooper Brothers & Co.: 1854-1954*, refers to the fact that the firm at the present time "is active in the expansion of some of the underdeveloped areas of the British Commonwealth." One of the founders, William Cooper, carried out appointments in Moscow and St. Petersburg in 1864. Subsequently his partners visited Germany, Austria, Italy, Greece, France, Spain, South Africa, and North and South America. To standardize procedure in British branches and in the associated firms overseas, Coopers prepared a manual of 850 pages.

There is a fairly wide exchange of American and overseas staffs, especially by the large international firms. The sharing of training and organizational procedures by American accounting partnerships with branches and affiliates in other parts of the world will enhance the technique and prestige of the profession. The numerous grants listed by the Institute of International Education provide insight into the constantly expanding program of foreign study opportunities afforded Amer-



icans in accountancy and related fields. The American Institute of Certified Public Accountants serves as a clearing house in attempting to arrange temporary employment of American accountants abroad and of overseas practitioners in the United States.

In 1954, The Institute of Chartered Accountants in England and Wales appointed an Overseas Relations Committee "to maintain and extend good relationships with accounting bodies and associations in other countries and to keep a watchful eye on overseas legislation of import to the profession, particularly with regard to the protection of practice rights." The Council of the English Institute has continued to reaffirm its belief "in reciprocity, in all parts of the world, of the right to practice under the professional designation which the individual accountant has obtained by suitable training, experience and examination without restrictions on the right to enter into partnership or agency arrangements with properly qualified accountants whatever may be their country of residence." The Committee's work relates not only to the two thousand English Chartered Accountants now in practice overseas, but also to other members and those not yet members who may in the future wish to establish their practices abroad.

Speaking at the Seventy-Fifth Anniversary of the English Institute, W. S. Carrington referred to the persistent and regrettable tendency, especially since the last war, "for overseas countries to adopt a restrictive outlook and introduce artificial barriers which we, with our long experience of professional development, regard as detrimental not only to the profession but also to the interests of the countries imposing them." He emphasized that international congresses are not enough, but that "real progress and development can only come through freedom to as-

sociate in practice throughout the world."

In the United Kingdom, the only important restriction on practice rights is that imposed by Section 161 of the Companies Act, 1948, relative to companies which are not exempt as private companies. This section empowers the Board of Trade to authorize persons to practice who have suitable overseas qualification, and the Board readily grants authorization to properly qualified accountants from overseas when this is required to enable them to accept appointments as auditors of public, or non-exempt private, companies. The act does not specify any residential requirement as a condition of authorization, and it does not impose any restriction on entering into partnership arrangements with members of the recognized United Kingdom accounting bodies.

The American Institute of Certified Public Accountants maintains a Committee on Foreign Affairs "to promote international goodwill and exchange among accountants throughout the world, and to encourage freedom of movement of accountants and auditors across national boundaries." The pamphlet, *Accounting For International Trade And Investment*, was prepared and distributed under the Committee's auspices. It stated in unequivocal terms the belief that accountants should be permitted to practice wherever their clients' businesses require them to do so, and that any curtailment of this freedom would constitute a real hindrance to international trade and investment.

It should be noted that the restrictive policies advocated by some members of the American Institute relative to interstate practice have been used by nationalistic elements in certain foreign countries. The American Institute Committee on Interstate Practice, in 1953, stressed that "in order that C.P.A.'s of the United States may rightfully claim the right to

practice abroad, it is essential to permit a qualified professional accountant of a foreign country in possession of a valid certificate, license or degree which authorizes him to practice public accounting in his own country and which was issued under acceptable professional standards to practice his profession in any state, district or territory of the United States. He should also be allowed to use the title under which he is registered in his own country, provided the country of his origin is indicated." The Committee at various times has stated that singularly few states have written these principles into their laws. The Committee's recommendation that the certificates of other states be recognized on the basis of equivalent standards rather than on the basis of reciprocity, for example, is not followed by at least thirty states. There is, in fact, a complete lack of uniformity in the states' approach to the whole question of interstate practice.

The listing of foreign shares on American stock exchanges can make a significant contribution to the movement of United States capital abroad. However, one impediment to listing is the necessity of enforcing full disclosure of company financial data. Keith Funston, President of the New York Stock Exchange, has emphasized that "it is a fact, not a criticism, to say that the foreign businessman still does not grasp what has happened in America since the turn of the century. He doesn't understand a system that is fiercely competitive, that fights for markets instead of sharing them, that reports earnings and sales instead of concealing them, and, most important, that woos stockholders instead of running from them."

In Italy, for instance, sound accountancy today is distorted by the desire to avoid taxation; this attitude stems from the fact that Italian taxes are almost confiscatory. Costs are padded on the theory

that, although not all of them will be allowed, prudence suggests that they be reported at as high a level as possible. Large Italian companies publish relatively detailed financial statements, but smaller firms do not. In many cases Italian companies maintain three sets of books—one for the tax collector, one for public stockholders, and one for owners and inside managers.

In France, there is a widespread practice of concealing assets from both the government and the public by carrying properties on company books at only a fraction of their present values—a practice made easier by continuing inflation. In Germany, where the need for capital has risen since the war, profits are reported frequently not just after normal depreciation but after investment in new plants, with a resultant underestimation of earnings.

Many European firms do not provide consolidated figures for the assets and profits of their subsidiaries. Dividends from subsidiaries are shown on the books, but these may or may not be based on earnings, and the amount paid into the parent company is discretionary.

Another accounting problem, which is relevant to the listing of foreign securities on the New York Stock Exchange, relates to statements of sales and earnings. In Italy, France, Germany and even in Britain, the statement of sales and cost of sales is not obligatory. Large enterprises, such as Imperial Chemical Industries Ltd., may publish sales figures in the annual report but this is not a normal practice. Usually a British income statement begins with a trading profit arrived at after deducting manufacturing and other costs. It then states depreciation, interest and taxes to arrive at a net profit figure. This method does not permit the investor to compare the company's margin of profit with that of other companies in the in-

dustry, as is possible in the United States.

The present series of articles seek to enlarge the accountant's knowledge of the profession in the free world. Admittedly, important developments must be occurring in Iron Curtain countries. Professor Roy Harrod's provocative references to the triple entry accounting system developed by the Soviet Union cannot be explored further under current conditions. Speaking at the Fiftieth Anniversary of The Association of Certified and Corporate Accountants, in London in 1954, he said in part: "There is need for research, for the endowment, for instance, of a research scholar to make a visit to look at Soviet accounts, because after all, beneath all the great panoply of slogans and ideologies, when you get down to the broad facts of life and of accountancy, there must be similar methods and similar problems."

In the last five years a great renaissance has permeated every aspect of the physical and social sciences, one phase of which is evident in the establishment of periodicals in a variety of foreign languages. Most of these magazines provide English translations; many of them include articles on accounting or on managerial techniques related to accountancy. The practitioner must follow overseas developments much more closely in the future than he has in the past. Perhaps, in the interests of conservation of time, he should receive abstracts of the outstanding articles in his field.

It is important for Americans to understand the factors behind the drive of underdeveloped countries to attain eventual complete divorce from overseas direction in the fields of company management, finance and personnel. Yet it is apparent that some years must elapse before nationals in these countries can be suffi-

ciently prepared to undertake the direction of the subsidiaries of overseas companies, and of the many domestic ventures which will be formed as the young countries gradually assume the status of partially, and later of fully, developed economies.

These same facts apply to professional accountancy. Most of the young countries do not possess the traditions, principles and techniques of the overseas profession. They must rely, at least for the present, on overseas auditors to carry out examinations of companies operating within their borders. Eventually, with the expansion of business and commerce and of the profession, industry and accountancy will be conducted by nationals.

It is increasingly apparent that members of the American profession must familiarize themselves with international professional developments as well as with international economic and political affairs. Without this specialized knowledge they cannot make a full contribution to the efficient operation of American companies domiciled in foreign countries, and to the encouragement of venture capital to flow overseas. Moreover, without this information, American investors cannot know the auditing requirements of areas where they are considering placing dollar capital. In the past, these investors have sometimes had to rely on local auditors whose standards were entirely different from those of this country, and their funds were not always adequately protected. The decision to employ local professional accountants or to insist on examinations by Certified Public Accountants or Chartered Accountants will become increasingly important in the future as additional investments are made by United States citizens in every part of the globe.

## DEPRECIATION—DOES IT RELATE TO ORIGINAL COST OR TO COST OF REPLACEMENT?

VIRGIL S. TILLY

*Partner, W. O. Ligon & Company*

THE American economy has reached heights of productivity unsurpassed anywhere in any age primarily because of two things—freedom of enterprise and competition. For the most part, a person is free to start up in business most anywhere in the United States, and when he does, he knows that he will be competing with others, not only with others in a similar business, but in competition with all other businesses and services. Ours is a risk economy and because of competition and freedom of enterprise, rate of productivity has been steadily increasing. Research and technological advancement have been stimulated and accelerated with the result that the man in business is faced with the compulsion to find or develop a better product or a more effective way to do things.

Even though research and technological advancement have moved ahead with great advances during the past twenty years, it is believed that technological competition with Russia will now further accelerate the growth of research. This means even larger investment opportunities over the next decade, a faster growth of productivity, a higher rate of obsolescence, and stronger sellers' markets. Dr. Sumner Slichter, Lamont University Professor at Harvard, recently gave his view of the long-range future, as follows:

"The long-range outlook for the economy is good, mainly because the economy in the last several decades has greatly increased its capacity both to raise the demand for goods and to raise the productivity of labor and capital. The basis for these is the rapidly growing new Industry of Discovery . . . The enormous capacity that in-

dustry is gaining to develop new products and to make old products obsolete is a new phenomenon in economic history. Its consequences are far-reaching and not fully understood. It does mean, however, that the economy has far greater capacity to develop investment opportunities than it has ever possessed before."

In consequence, old plants and old machines become obsolete because they cannot compete on equal terms with the new. Furthermore, the new will be a much improved version of the old. It may or may not cost more than the old. In fact the new may likely be an entirely new facility or process unknown before then.

Also because of these developments, the businessman is careful to study many factors before he builds a new plant or buys new machines or starts an entirely new business. He knows there is no guarantee that will save him from losses or failure.

If he buys a comparatively short-lived asset, his risks are likely to be less than if his purchase is of a long-term asset that may require 20 to 50 years of profitable use in order to justify the investment. I repeat, he is in fact competing with everyone and everything. This situation applies without restriction to the major portion of our economy. It is only with respect to high-cost establishments such as steel, rails, and motors, or to monopolies such as utilities, where the full effect of the forces of freedom of enterprise and competition do not apply. However, these are not entirely free from the effects of these dynamic forces, because they too are subject to strenuous competition from businesses other than those similar to their own.



For one reason or another, many undertakings fail, many others get along in an average way, and a relatively few prosper. That is the background that we should keep in mind when we discuss the problem of accounting for plants and other business property that represent capital expenditures.

#### DISCUSSION

First, we should define the nature of the expenditure.

For this discussion, we can classify all expenditures as either current, because they are consumed within the year, or deferred because none or only a portion is consumed in current operations and the balance will presumably be consumed over a period of years.

Then, we need to determine whether the amortization of the deferred or capital expenditure is to be related to the actual cost of the expenditure at the time it is acquired and placed in use or is it to be based on its cost of replacement at the time that the property has been fully consumed.

In other words, is depreciation an expense that represents the amortization of the original cost of a capital asset? Or is depreciation an expense that represents in the aggregate a sum sufficient to replace a capital asset after its extinguishment?

It is not likely that anyone could maintain for the second premise stated above, if it weren't for a desire to use a higher charge for rate making purposes or as an income tax deduction during a period of rising prices. In other words, except for rate making purposes or for income taxes, the net result would be the same to the business enterprise regardless of whether depreciation is recorded as a charge based on actual cost of the property or based on an estimate of the amount that will be required to replace the same property at the end of its useful life. That is for the

reason that, except for monopolies, prices that business receives for its products and services are established, not by a depreciation policy, but by a combination of the effects of the workings of the forces of freedom of enterprise, and unrestricted competition and the concomitant increasing rate of productivity, research, technological advancements, and the law of supply and demand.

Yes, we should keep before us the nature of business enterprise and the risks inherent therein. Business in our market place economy is never static. Neither do all businesses prosper together when times are good generally nor do all businesses necessarily suffer together in bad times. Neither does any one business go on bigger and better in a straight line upward, but normally each business enterprise has its own peaks and valleys, its own ups and downs, separate and distinct from the experience of other businesses.

In consequence, when we depart from original cost of an asset in order to determine the current charge for depreciation, we would be confronted with so much distortion that income statements would be of little use except to reflect income and expenses other than depreciation. In one year, the steel business may be especially prosperous; but the textile and other industries may be in a depression and in another year, the level of prosperity can be just the reverse for these industries. Furthermore, deterioration of location or change in utility of a plant or piece of machinery may dictate that there will be no replacement of the facilities and the application of a price level factor in that kind of situation would admittedly be impractical.

Let us ask ourselves then, how can a price level factor be a fair and dependable base for the determination of depreciation? In answering this question we must assume that a "price level" factor is to be used



whether it exceeds or is less than actual cost or whether for a particular business, it is in a period of rising prices or falling prices. We should remember too, that there are many other types of investors in our society, such as bondholders, land-owners, etc. Should their investments also be upgraded by a price level factor in order to determine the allowance for cost for the computation of taxable profit in case of sale and would they be satisfied and happy with a principle that requires them to write down as well as to write up for the determination of their tax base?

Yes, we take our risks in this changing, dynamic economy of ours. That means we are obliged to be constantly alert for changes that may occur. Even so, some of our purchases turn out to be windfalls and many become white elephants. Mostly, however, the plant and machinery of today will be outmoded sooner than we may think. They will not be the same plants and machinery that we will be using tomorrow—in fact many plants and much machinery in use now will be abandoned before exhaustion from wear and tear, for obsolescence will send them to the junk pile. Many others will operate only as marginal properties, depending on the degree of frustration of competition and imbalance of supply and demand that may

be occasioned by war, governmental restriction or other abnormalities.

#### SUMMARY

As accountants, our responsibility is to report on the trusteeship of management. Management in turn should not be charged with accountability for assets and liabilities or for the determination of income on a basis other than the basis of the actual assets that were placed in use and consumed in operations.

Furthermore, as accountants, we should firmly resist efforts to confuse accounting principles with devices to secure increased rates for a utility or to obtain income tax deductions. An accounting principle is supposed to apply with equal fairness and reasonableness in all situations where applicable, whereas a device is simply an expediency for a special situation. Historical cost of assets is not a fetish as some assert, but it is the actual basis on which management does its planning and operates the enterprise.

Is not depreciation then the amortization of a capital expenditure that represents a charge to income of the actual cost of the expenditure over the useful life of the asset represented thereby? How can depreciation with fairness and reasonableness be anything else than that?

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# THE DISTRIBUTION COST PROBLEM

HADLEY P. SCHAEFER

*Palon Fellow, University of Michigan*

**M**ODERN day management views manufacturing inefficiency as inexcusable. Production men expect pertinent reports that spot operational weaknesses and permit the intelligent appraisal of alternative choices. Accountants and engineers have toiled endlessly to perfect tools for cost determination, cost control, and cost disclosure that meet the needs of management. The establishment of standards of performance and measures of efficiency is taken for granted by production management. Yet, while so much emphasis is placed on production cost accounting, the area of distribution cost accounting is substantially neglected.

This arrested development is not entirely a function of the accountant's reluctance to tackle a complex problem. Indeed, thoughtful accountants view the problem as a challenge to the techniques of their profession. But management has been primarily production-minded until comparatively recent times. As demand increased for more and better products, industry centered its efforts on reducing real unit costs of production. Markets expanded until scarcely a crossroad was deprived of modern consumer goods. With every additional crossroad, the cost of bringing the finished goods to the consumer increased. Distribution costs chewed deeper into gross margin and gradually became a significant element in determining net income. So management attacked its new objective—distribution costs.

Distribution costs have certain unique characteristics that resist the refined tools of production accounting. Production accounting deals with quantitative, mechanical functions capable of physical measure-

ment. Distribution accounting is confronted by qualitative functions incapable of finite measurement. Can the attitudes of salesmen, customers, and competitors be measured and standardized? Will each sales call require a standard expenditure of selling effort, promotional effort, and clerical effort? They will not.

The setting for manufacturing is usually limited to a physical plant, while the distribution settings range from large sparsely settled rural areas to densely populated cities. Production lends itself to fairly routine supervisory methods, but distribution activities are flexible and widespread so that close well-directed supervision is frequently inappropriate. Again the efforts to establish standards of performance and measures of efficiency are thwarted.

Up to this point, the discussion has touched upon the evolution of managerial concern for distribution costs and the contrast between distribution and production characteristics. The term "distribution costs" has been employed by some writers without regard to a precise definition. Many authors define distribution costs as all costs except production costs. Still others define them as all costs necessary to place the finished product in the hands of the consumer. The National Association of Cost Accountants and The Association of National Advertisers classify distribution costs as:<sup>1</sup>

Direct Selling Costs  
Advertising and Sales Promotion

<sup>1</sup> For a detailed classification, see *An Analysis of the Distribution Costs of 312 Manufacturers*, published by the Association of National Advertisers, Inc. in collaboration with The National Association of Cost Accountants (1933), pp. 5-6.

Transportation  
Warehousing and Storage  
Credit and Collection Expenses  
Financial Expenses  
General Administrative Expenses  
All Other Distribution Costs.

The first four classifications are definitely attributable to the distribution of the finished product and may be grouped with the last classification as "selling expense." The three remaining classifications, the fifth through the seventh, may be designated properly as "administrative expenses." This is the concept of "Selling and Administrative Expense." A critic is quite fair in asking one to define "General Administrative Expenses" and "All Other Distributive Costs." To such a question this writer is inclined to reply that herein lies still another complex problem in distribution accounting—defining precisely "distribution costs." Yet, the inability to define precisely "distribution costs" should not subdue analytical attempts. Even a rough classification of distribution costs, once attempted and refined continually can lead to pertinent analysis and perhaps move closer to the ultimate finite definition of the problem.

Management endeavours to pinpoint distribution weaknesses and take into consideration alternative distributive means. The fuel for such analysis is strong internal distribution accounting that permits accurate cost determination, control, and direction of distributional effort. The same analysis may prove helpful in determining pricing policies where the firm has the power to influence selling prices and in determining price differentials.

Before discussing means of analysis, one must recognize that even in the era of production-centered thinking, distribution costs were analyzed. Motivation was generally intuitive, and resulted in the analysis of evident trouble areas. While cost accountants prepared elaborate routine re-

ports and schedules on manufacturing operation, distribution reports were left to intuition. Like a football coach on Monday following Saturday's lost contest, the distribution executives sought to correct mistakes already made. Unlike some football coaches, the businessman cannot write off losing causes for the sake of building character. The distribution accounting system must provide data for periodic reports that lend themselves to immediate corrective action. The businessman must take action in the first quarter, not after the game has been played.

### *Methods of Analysis*

Three techniques of analysis crop up in nearly all literature on distribution costs. The first is analysis by natural expense (object of expenditure or primary expense). The second is analysis by functional operations performed and the third is analysis by manner of application of distribution effort.<sup>2</sup> The third might be described as the application of functional analysis to a particular objective.

Any analysis involves breaking a whole into its component parts. For the sake of distribution analysis the breaking down usually takes place outside the books of account. This does not preclude the urgency of carefully classifying the expense items properly includible under distribution accounting.

### *Analysis by Natural Expense*

The worth of a particular analysis by natural expense is a function of the initial classification of expenses in the books of account. The particular classification for a firm is entirely dependent upon the nature of the enterprise's activity. Certainly a retail clothier would require different primary accounts than would an automobile

<sup>2</sup> For a more complete treatment see *The Analysis and Control of Distribution Cost*, by J. Brooks Heckert, The Ronald Press Company, New York, page 19.

distributor. Criteria for expense classifications are: (1) no large miscellaneous classifications, (2) no small insignificant classifications which fail to repay the management in sufficient dollar savings to justify the bookkeeping cost, and (3) items chargeable to a given account must be homogeneous.<sup>3</sup>

Natural expense analysis typically is an item-by-item comparison of a firm's expense data with data for the industry. The industry figures are generally expressed in percentages of some base such as total distribution costs, net sales dollar, or gross margin dollar. For valid analysis the firm data must be similarly expressed bearing in mind certain limitations. Industry figures result from a definite account classification by title and content. A firm may employ identical account titles but charge different cost items to the titles. Meaningful analysis depends on homogeneous content.

Even with properly classified accounts, the analysis relies on the quality of available industry figures and the judgment exercised by analysts in interpreting variations between firm and industry. Do the industry percentages portray the results of a "typical" firm in the industry and, if so, what is a "typical" firm? The answers to both questions are left to the institutions which compile operating data for the industry. The firm analyst must decide how typical his firm is. Variations resulting from the comparison signify little more than the fact that differences exist. Without functionalization of accounts, interpretation of out-of-line costs is absurd.

A second form of analysis is a comparison of the firm's periodic natural expenses. Either absolute costs, unit costs, or costs expressed as percentages of some base may

be compared. Absolute costs are of little or no analytical significance. Unit costs and percentage costs are pertinent insofar as they develop relationships and point out cost trends.

The derivation of unit costs presents difficult problems. What units properly measure variability of natural expenses? There is no one right answer. For maximum simplicity and economy, units produced or units sold may be suitable. Once the measuring unit is selected, unit costs are readily computed by dividing total costs by the number of units for the period. Nothing more need be done for year-to-year comparisons. However, month-to-month comparison diminishes in importance unless due recognition is accorded the fixed and variable cost components. Variable costs reflect the impact of distribution policies which increase or decrease the measuring unit. By segregating variable unit costs, the analyst creates a tool for appraising distribution effort.

Sales units, sales dollars, and gross margin dollars have been suggested as bases for determining either unit costs or percentage costs. It is important to recognize that each of these bases is influenced by seasonal and cyclical fluctuations. Not only do sales fluctuate from period to period, but the periods in which sales-creating costs are incurred and sales results are realized seldom coincide. To cope with the seasonal problem, some authors have suggested the deferral, until the sales occur, of those costs which are directly related to the revenues. The technique requires an assignment rate similar to a burden rate in production accounting and tends to smooth the net income figures. Critics will note that income figures on interim statements have little significance and that unit costs are more effective for control purposes.

Cyclical fluctuations create idle capacity. How is the distribution accountant to measure distribution capacity? It is an

<sup>3</sup> For a detailed statement of these criteria see page 7 of *Distribution Cost Accounting for Wholesaling*, by Herbert F. Taggart, U. S. Department of Commerce, Domestic Commerce Series No. 106, published by the U. S. Government Printing Office, Washington, D. C.



intangible concept in natural expense analysis. In functional analysis, the accountant may possibly compute standard budgets at normal capacity for each function and determine the volume variances.

Analysis by natural expense is simple and economical once the accounts are properly classified. Yet, the discriminating accountant must avoid the deception inherent in applying simple tools to complex problems such as those of cost control and cost responsibility.

#### *Analysis by Function*

Functional analysis lends itself to consideration of cost responsibility and control, not to mention the ready preparation of standards and budgets. These characteristics naturally appeal to management in that standards of performance and measures of efficiency are attainable. Yet, the complexity and subsequent added costs of such analysis may dim management's enthusiasm.

Before describing functional analysis, it is necessary to state its relation to analysis by manner of application of distribution effort. The latter analysis is essentially the application of functional analysis to a particular distribution objective. Some authors distinguish between the methods, others combine them. This paper will discuss each analysis separately.

The steps in functional analysis are:

- (1) Subdivide the total primary costs into homogeneous functions that relate to the cost items.
- (2) Segregate costs into functions for which responsibility is determinable.
- (3) Select units that measure the variability of each function.
- (4) Compute the functional unit cost equal to the total cost of the function divided by the number of units.

Once the unit costs of each selected function have been computed, comparisons may be made with unit costs of prior periods or of the industry. In fact, standard

unit costs may be determined for certain functions and when compared with actual results, permit price and quantity variation analysis.

The challenges confronting distribution accountants are the selection of functions, the allocation of primary expenses to functions, and the determination of service units. The selection of functions depends on the degree of cost control and cost responsibility desired. Accountants and distribution executives should determine the functions jointly.

The task of subdividing primary expenses into functions becomes involved when an expense is common to one or more functions. This accounting trouble-area is frequently labeled "joint-cost problems." Salesmen's calls typify the problem. A salesman both promotes sales and takes orders during his calls—two distinct functions. How are the salesman's costs divided between sales promotion and clerical order taking? Time studies are a possibility, or the salesman may estimate the distribution of his time between functions. Better yet, competent sales executives may make the estimates. However the allocation be accomplished, the accountant must avoid being arbitrary. Retaining unallocable costs in a common pool to which each function contributes is more desirable than arbitrary allocations.

After functionalizing the costs, the accountant may segregate the fixed and variable cost elements in each account. Fixed elements vary with time and are readily segregated. The difficulty comes in finding a unit that measures the variability of cost elements which are not related to time. For instance, "trucking" contains fixed cost elements of supervision, truck depreciation<sup>4</sup>, and insurance—to mention a few. Variable costs include labor, maintenance, and other items that are related

<sup>4</sup> This example assumes that a production method of depreciation is not employed.



to activity. What is a suitable service unit? One may answer truck-hours or perhaps the weight of shipments hauled. Truck-hours does not distinguish between running time and loading time. The weight-based unit fails to account for the order size of each shipment and the distance hauled. Consequently, neither unit directly measures variability. Similar difficulties are encountered with other functions.

Once the analyst has the unit costs of functions, he may begin the functional examination of distribution activity. He may uncover functions with excessively large unit costs as compared to budgeted standards, or functions which indicate a trend of rising unit costs as compared to figures of prior years. Regardless of the results or technique of analysis, the examiner should realize the relationships existing between functions. One might rightfully state that a function is a function of a function. A slice in expenditures for direct mail advertising may depress sales volume which in turn reduces salesmen's commissions, outgoing handling costs, order-checking costs, and other functional costs related to sales volume. A statistical analysis of the results produced by these interrelated functions might be a hopeful approach.

While functional analysis fulfills the needs for cost control and cost responsibility, it fails to supply the necessary data for appraising alternative direction of distribution effort.

#### *Analysis by Manner of Application of Distribution Effort*

Proper decisions are the lifeblood of successful management. Decision-making ability is indeed a refined art about which much has been written. Yet, each refinement in the decision-making mechanism goes for naught if significant managerial data are lacking. Pertinent figures are the raw material for any decision and without them the fabrication of good decisions is

impossible. The accountant is charged with the duty of supplying distribution executives with accounting data. His task is best accomplished by applying functional analysis to particular distribution objectives. This form of analysis is frequently entitled analysis by manner of application of distribution effort.

The principle behind this application is that particular distribution objectives require more or less functional services. To compute the cost of a particular objective, simply determine the number of service units required by each function, multiply by the corresponding unit costs, and add.

Elementary as the procedure appears, the transition from functional analysis to a particular application necessitates definite modifications. Foremost is the need to re-define service units for certain functions. This occurs because the service units in the functional analysis are not necessarily related to the objective of the applied analysis. For example, the objective may be to examine costs for various dollar sizes of orders. One of the functions involved is "Cash Receiving" for which the service unit is "the customer month." For this particular analysis the direct relation between "the order" and "cash receiving" suggests "the order" as a more suitable unit.

In some instances, no amount of re-defining will directly relate functions to the objective. These functions are properly termed indirect. They may be arbitrarily allocated on the grounds that the objective benefits from the function or is responsible for the function. An alternative procedure is the contribution approach whereby the contribution of each object to the pool of indirect costs is computed. To illustrate, where the cost of products is the analytical objective.<sup>5</sup>

<sup>5</sup> For a more complete treatment see Exhibit 3, F. S. Howell's "A 'Contribution' Approach to Distribution Costing" in the N.A.C.A. *Bulletin*, October 1954, Section 1.

	Prod- uct A	Prod- uct B	Prod- uct C	Total
Sales.....	xxx	xxx	xxx	xxxx
Manufacturing Cost of Sales.....	xx	xx	xx	xxx
Gross Margin.....	xxx	xxx	xxx	xxxx
Direct Costs.....	xx	xx	xx	xxx
Contribution to Indirect Cost Pool.....	xxx	xxx	xxx	xxxx
Indirect Costs.....				xxx
Net Profit.....				xxxxx

This analysis fails where the objective is the determination of explicit net profit figures, in which case all costs must be allocated. However, if the only alternative to this analysis is the use of arbitrary bases for some items, one can hardly defend the resulting figures as being explicit.

One final limitation is worth consideration. Any distribution analysis should match operating revenues with operating expenses. Income taxes, interest revenues, and other non-operating expenses and revenues are excluded. Implied in the matching is the proper interpretation of certain accounting data. Purchase discounts taken are not revenues, but deductions from cost of goods sold. Sales discounts are not expenses but deductions from gross sales. The analyst must carefully determine data on which decisions may be based.

Regardless of the objective of the analysis, the procedure demands certain steps:

- (1) Functionalize costs to fit the various analyses.
- (2) Determine service units and the unit costs.
- (3) Segregate direct costs.
- (4) Segregate indirect costs in a pool and determine contributions to the pool.

This list is intentionally brief and implies the inclusion of procedures discussed under functional analysis.

Now the many and varied applications of functional analysis will be discussed

briefly. A common application is the examination of costs of products with the aim of determining which products to push and which products to drop. In some instances management may find it necessary to change its pricing policies for certain products or perhaps to add products. It is sufficient to say that management should have data on which to base decisions.

Analysis by customers or customer groups leads the way to profitable direction of sales efforts. Frequently, customer groups are subclassified by territories, by volume of purchases, or by size of purchase orders. Few costs are directly related to customers so that the analysis will be mainly of indirect costs. Bear in mind that indirect cost analysis is expensive and when undertaken must repay management with pertinent data.

Analysis by sales territories focuses attention on cost responsibility and territorial profitability. It is well to view each territory as a distinct entity and to recognize that each territory has unique characteristics which may invalidate direct comparisons of profit figures.

Departments, channels of distribution, salesmen, and operating divisions are likely objectives for other analysis. However, this paper is concerned with the fundamentals of analysis, not the many applications.

Management maximizes benefits from distribution accounting by selecting significant objectives for periodic analysis and disclosure. The form for periodic reports depends on the needs of management. Reports should emphasize data essential for decision making. Over-elaborate reports hinder effective disclosure.

### Conclusion

Methods of analyzing distribution costs are underdeveloped because management has been primarily production-oriented.

The application of production accounting tools to distribution problems proved inadequate and exposed the need for specialized distribution accounting techniques.

The first step was analysis by natural expense but the objectives of cost control and cost responsibility were neglected. So the natural expenses were subdivided into functional costs, giving rise to problems of joint cost allocation and service unit determination. However, cost control and cost responsibility were attained. Still, management lacked reports which permitted the appraisal of alternative distribution policies. To answer this need, functional analysis was applied to particular distribution objectives and more difficulties arose. The difficulties included the selection of new service units, the applica-

tion of indirect costs, and the development of significant reports.

The evolution of distribution accounting is still in process. As accountants learn more about this problem, refinements in techniques occur. Each refinement improves the quality of data necessary for the establishment of standards of performance, the measurement of efficiency, and the appraisal of alternative choices. A thorough study of the field of marketing would enhance substantially the analytical tools of the distribution accountant. Production accountants realized the worth of industrial engineering techniques and so must the distribution accountant acquaint himself with marketing techniques. Some day management *should* view distribution inefficiency as inexcusable.

## THE OIL VENTURE—AN EXERCISE IN ACCOUNTING

L. MILTON WOODS

**A**LTHOUGH the joint venture is found to some extent in practically every major industry, the oil industry is particularly blessed—or plagued—(depending upon your viewpoint), by this type of business organization. This is a result of several factors. The great risks which are inherent in the oil exploration effort make desirable some organization which will spread these risks. Also, conservation requirements often dictate organizations which extend beyond existing ownership patterns in a given field development. These factors give the oil venture a characteristic not found in most other ventures. The parties to the oil venture are often very unequal in terms of economic size. The great giants of the industry are found joined in ventures with small corporations, partnerships, and even individuals. This is one of the primary reasons that there is almost no standardization between ventures, for each situation is different from every other.

All of this tends to create some interesting problems for the accountant who is called upon to maintain proper records of the many, and often complicated transactions arising from the venture.

### *The Character of the Venture*

Before considering the accounting problems inherent in the oil venture, it is well to consider what the venture is. This is in itself a difficult question to answer, because the joint venture within the oil industry, although widely used, has not been subjected to precise analysis and definition. In accounting circles, the joint venture is generally thought of as a species of partnership, intended to accommodate a specific transaction for a limited period of

time. The oil venture will fall technically within the purview of this definition, if we remember that the purpose is generally to permit the development of a particular area. To that extent, it can be said to be limited to a particular transaction. However, it is definitely not limited in time, for there are many fields which are in production after forty years. Therefore, the venture will have to be formed carefully enough to meet the needs of the parties many years hence, taking into consideration possible technical problems, effects of taxation, inflationary influences, etc.

Generally the venture agreement is drawn so as to negate the existence of a partnership. In such cases, the parties will probably elect not to be subject to the provisions of Subchapter K of the Internal Revenue Code. From a purely business standpoint, it is often desirable that the venture not be considered a partnership, because a large company would not wish to share the unlimited liability of a general partnership with other parties less sound economically. Apparently a venture which can avoid being classified as a partnership is merely a tenancy in common as to the joint property.

The parties to the venture are the owners of the right to drill for and produce the oil from the properties involved. This right is termed the "working interest," to distinguish it from other interests in the oil, such as the royalty interest.

The basic authority for the oil venture is generally contained in a formal operating agreement, in which the owners of the working interest in the minerals commit their share of the working interest to be operated by a single party, called the Operator. This party is empowered to do

all things necessary to find and produce the oil, but generally the right to sell the oil attributable to each owner is reserved by that owner. This power of the Operator includes the responsibility for drilling and equipping wells, in accordance with general instructions of the operating committee. The operating agreement will generally include an accounting procedure, the details of which will vary greatly from one agreement to another. There are some excellent "standard" accounting procedures, and these have been adopted in some areas. It is the accounting procedures which governs most of the accounting details for the venture. Situations which are not covered by the accounting procedure may be ruled upon by an accounting committee, if one is provided by the agreement.

#### *Accounting for the Venture*

The Operator will make all expenditures for the operation of the venture, although occasionally another owner will expend money (such as for lease rentals), and reimbursement for such expenditures is governed by the accounting procedure. It is the theory of the accounting procedure that the Operator should neither make nor lose money by reason of being Operator of the venture. However, because of the very complex situations which arise, it will be seen that this objective cannot always be realized.

#### *Operating Expenses*

In general, the Operator is entitled to reimbursement of his expenses of operating the property. However, as was pointed out above, the oil venture is often composed of parties whose economic stature is very disparate. Thus, the type and amount of expense incurred by a major oil company in operating a property might be quite different from that incurred by a small independent operator. For example,

the major company will often have extensive field and district offices to provide supervision over lease operations in the area. In addition, the major company will probably have its own workover equipment, engineers and other technical employees. By way of contrast, the independent operator may contract for the labor to operate a property, and hire all workover and technical work done by outsiders. The type and amount of supervision in each case will vary considerably.

Therefore, supervisory type expenses are often limited in the accounting procedure to a fixed percentage of direct labor. This percentage is designed to provide a fair allocation of all supervisory costs, in addition to the costs of company "benefit plans," and other indirect overhead costs. Obviously, such an arrangement will not recover the overhead of the large companies, when applied to small operations which do not efficiently utilize the large organization.

Another type of expense which is commonly limited by the accounting procedure is the cost of so-called "service systems," such as motor pools, well-servicing equipment, etc. Since the usage of such systems will have a great effect upon the actual cost per distribution unit, the rate of charge for these items is commonly limited to recognized industry averages. Where no acceptable averages are available, the rates may be negotiated. In either case, the Operator may not recover his cost in the system.

Of course, as will be pointed out later, the cost of capital additions is charged directly to the various owners when incurred, so that the Operator makes no charge for depreciation as a part of operating expenses.

The accounting procedure will ordinarily permit the Operator to recover a fixed percentage of the cost of new construction as reimbursement for supervision of the con-



struction. This rate will almost always be negotiated, although the Operator may, in some cases, be permitted to recover actual cost, when the construction is of such magnitude as to require the continued use of a large supervisory staff.

Since the Operator is responsible for charging the joint venture on a cash basis, all prepaid items, such as taxes and insurance, will be recovered as incurred by the Operator, regardless of the manner in which these items are handled on the Operator's books.

Because of the fact that all owners will ordinarily have the right to dispose of their shares of production, no effort will be made by the Operator to present anything resembling an income statement. A payout statement may be prepared, which is important in many instances. The payout is calculated as the difference between total expenditures, both capital and operating, and total income, and is positive when total income exceeds total expenditures. Because of the difficulty of defining and calculating net income from the operating statements, the payout is generally used as the yardstick for evaluating the economic worth of the property.

#### *Capital Expenditures*

It would seem reasonable at first thought that the subject of capital expenditures incurred by the Operator would be a simple one, since the Operator should be entitled to recover the cost of each item purchased for the joint property. And such would be the case, if all items installed were purchased new from outside vendors. However, any Operator will have some used material which can be made available in developing new properties, and the operating agreements recognize the desirability of utilizing this property. But the question at once arises: At what price will this material be charged to the joint account? In an effort to find

an equitable answer to this question, a system of pricing used material at a percentage of the cost of new material of like kind has been adopted. Thus, material which is used, but is usable without repair, is commonly priced at 75% of "current new market" price. It should be noted that this percentage will be applied without regard for the age of the article, since condition is the determining factor.

This system of pricing produces some curious results. In a period of rising prices, such as the industry has experienced over the last several years, the purpose of the pricing system is often wholly defeated. Thus, if an engine cost \$1,000 five years ago, and can now be bought for \$1,200, it will be charged to the joint property at \$900, if it is usable without further repairs. Yet, assuming a 20-year life is being used by the Operator on its own books, the net book value of this engine is only \$750. If the joint property is 50% owned by the Operator, the result of this transaction on the Operator's books is summarized below:

Cost of the engine.....	\$1,000
Recovery from joint property (50% of \$900).....	450
Net cost.....	\$ 550
Depreciation to date (5 years).....	250
Net book value after transfer.....	\$ 300

Since the Operator still owns 50% of the engine, this net book value of \$300 is to be compared with a net book value of \$375 (50% of \$750) immediately before the transfer to the joint property. Thus, \$75 of the Operator's net book value in excess of his proportionate share of ownership is being borne by the other parties.

Exactly the opposite result is accomplished if it is assumed that the engine was purchased new for the joint property at a cost of \$1,000. Assuming the same conditions as before, if the Operator removes the engine from the property at the end of five years, the joint accounts will be

credited for \$900. The effect of this transaction on the Operator's books is summarized below:

Cost of the engine (50% of \$1,000).....	\$500
Additional cost at time of removal (50% of \$900).....	450
Net cost.....	<u>\$950</u>
Depreciation to date (25% of \$500).....	125
Net book value after transfer.....	<u>\$825</u>

A similar asset purchased at the same time for the Operator's own properties would have a net book value of \$750, so that in this instance, the credit to the joint accounts appears to be greater than is justified by the usage on the property. Of course, these examples have been simplified for clarity's sake, but there are instances in which the Operator will actually recover more than his cost in an asset which is transferred to a joint property, merely because the price level has increased sharply.

It is the objective of the accounting procedures to provide a charge for usage of equipment on the joint property, and still provide a means for equitably reimbursing the other owners when the Operator elects to remove equipment to its own properties. As we have just seen, these two objectives cannot be wholly realized, except in a period of fairly stable prices. In a period of rising prices, it is inevitable that inequities will result.

As was previously mentioned, materials and equipment which are purchased directly for a joint property are charged to that property at cost. In the case of the smaller Operator, this would probably be the case in most instances, since the Operator would be unlikely to have a large stock of equipment and materials readily accessible to the new property. However, the larger companies do maintain considerable stocks of both materials and equipment, which can be used to equip new properties discovered in the area.

There arises a problem as to how these items will be priced when charged to the joint accounts. The answer is that they are priced on the basis of condition, and at the price to currently replace the stock. For the large Operator, this price will almost never be less than cost, since the "current new market" price is calculated less all trade discounts, but *not* cash discounts. Thus, if the Operator purchases casing for \$10,000, on which a discount of \$200 was taken, the entire amount of \$10,000 would be recoverable from the joint property, if the casing is delivered from the Operator's warehouse stocks. Most large companies do take cash discounts as a matter of policy, which would provide an automatic profit in such cases. Also, it should be noted that some companies make it a practice to warehouse all materials, so that all charges to the joint properties are computed at "current new market" prices.

#### Auditing and Records

Most operating agreements provide for an audit by representatives of the other owners. This audit is designed to ascertain that charges to the joint property have been made in accordance with the operating agreement. Therefore, it is necessary that the Operator maintain records in such detail as to provide the means for this verification. To this extent, then, the joint venture can be said to have its own books of account. These accounts are not kept in the normal sense, however, since the only balance sheet accounts that are maintained are asset accounts for equipment and materials, there being no necessity for maintaining cash, receivables, or liabilities on the books. Most entries to the accounts would arise from the Operator's general books, although there are some entries, such as the recording of gain or loss on retired equipment, that must arise within the venture's books.

*Conclusion*

In conclusion, what are the arguments for and against this particular application of appraisal accounting? In favor of the more conventional approach of accounting for operations on the basis of cost to the Operator, is the advantage of eliminating book profits and losses which inevitably result when arbitrarily chosen values are selected as the basis for accounting entries. However, cost is difficult to define, especially when one is dealing with used

materials, so that its value is almost lost in some cases. Also, there is no uniformity of depreciation rates in the industry, so that "net book value" is meaningless. And probably most important, any effort to utilize cost would make auditing extremely difficult, since it would require the maintenance of original detail long after most companies would dispose of it. Because of these difficulties, the possibility of adoption of cost-basis accounting for oil ventures seems extremely remote.



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# THE ROLE OF THE ACCOUNTANT IN EQUIPMENT REPLACEMENT ANALYSES

RAYMOND R. MAYER

*Assistant Professor, University of Chicago*

THE purpose of this paper is to present the steps that can be taken by an accounting department to make a positive contribution to the implementation of a sound equipment policy. The most effective manner of doing this is probably to begin with a presentation of the prerequisites for any sound equipment policy and then to continue with a determination of what the accountant can supply toward the satisfaction of these prerequisites.

## *Prerequisites for a Sound Equipment Policy*

Equipment policy can be defined as being the framework within which a company formulates an approach to equipment acquisition. More specifically, it is the system to which management adheres in determining which of a number of available units of production equipment shall be selected to manufacture the company's product.

Any equipment policy, if it is sound, must satisfy certain basic requirements. First, an equipment policy must provide the means for recognizing an equipment investment opportunity. Second, it must make available a method for determining what the alternatives are. Third, an equipment policy must include procedures for accumulating the data which will serve to describe the alternatives. Fourth, it must include a method for evaluating these data in a manner which will result in the best alternative being selected. And fifth, the policy must permit making subsequent checks to determine whether the anticipated benefits have been realized.

## *Recognizing a Replacement Opportunity*

Recognition of an equipment investment opportunity is in a way the recognition of the existence of a problem. The problem is that somewhere in the company's shop there is a machine whose operating characteristics are such that the firm is incurring excessive costs, experiencing a significant loss of revenue, or both. Obviously, some means must be devised for bringing a condition such as this to the attention of management.

An approach which suggests itself is that a study be made periodically of every piece of equipment in the plant with a view toward possible replacement. Unfortunately the cost of such comprehensive surveys would ordinarily be prohibitive. Nevertheless, the recommendation does suggest a related technique. If some criterion could be adopted by which machines most likely requiring replacement could be pre-selected, periodic studies of these units could be made with the expenditure of a reasonable amount of time and effort. One such criterion is the attained age of the equipment. By reviewing its past records, a given company might find that, for a certain class of equipment, the probability of profitable replacement is very high once the equipment reaches a certain age. This is not to say, however, that this approach does not have its deficiencies. To begin with, the company might have been replacing equipment too late in the past, and actual service lives would not necessarily coincide with economic service lives. Next, the economic life for any one asset might be less than the average economic

life of a group of such assets. The result would be that, by adhering solely to this procedure, the company might be overlooking profitable investment opportunities. For this reason, other procedures must be established to complement the one calling for studying all machines which have attained a certain age. It is at this point that the accounting department can make a definite contribution.

A need for replacement is usually created by an asset's accumulating deterioration and obsolescence. Although a study of past cost records will not ordinarily reveal the presence of obsolescence, it will reveal the presence of deterioration. As a machine deteriorates, certain costs are very likely to increase appreciably. These costs would probably include such items as special repairs and spoiled work. If a record were maintained for each machine showing, for example, what the cost of special repairs on that machine was for some preceding time period, the department responsible for making equipment analyses could, through a periodic review of these records, note and investigate those machines on which repair costs are becoming excessive.

Certain companies might find that other cost items are more significant in the circumstances under which they operate and might choose to concentrate on those charges in their effort to recognize an equipment investment opportunity. It is important that the firm determine what operating costs reflect the presence of deterioration and then establish the forms and procedures required to ascertain the magnitude of these expenses for each piece of equipment. For this, management must rely on its accounting department, for no other group in the organization is better able to develop and maintain these records.

Of course, the need will always remain for having shop superintendents, foremen, and machine operators notifying concerned

individuals when a given machine is incapable of maintaining tolerances or is unable to produce at a rate required to meet production schedules or cannot be depended upon for satisfactory performance. In addition, the presence of obsolescence can often be recognized only through contacts with external sources of information. For example, representatives of machine tool manufacturers must be depended upon to acquaint the company with new developments in the design and construction of the equipment produced by the firms they represent. The company's equipment analysts can obtain similar information by reading current technical publications, attending machine tool exhibits, visiting manufacturers of machine tools, and through informal contacts made at appropriate meetings and conferences.

In summary, therefore, the means for recognizing an equipment investment opportunity should include periodic surveys of certain equipment, records of selected operating costs such as special repairs or scrap, reports from shop supervision and machine operators, and information obtained from external sources. Although the accountant can make available only records of selected operating costs, it must be borne in mind that this information is extremely valuable.

### *Selection of Alternatives*

It follows that once a decision has been made to study the possible replacement of a machine, one of the next steps must be the determination of available alternative machines. There is nothing that the accountant can contribute here. Instead, the company's equipment analyst relies, to some degree, on his own knowledge of the manufacturers of various types of machine tools. He acquires this knowledge through contacts with representatives of builders of production equipment, advertising literature, and technical publications. This

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knowledge, supplemented by directories in which manufacturers of different types of machine tools are listed, permits compilation of a list of possible suppliers who can then be asked to supply information on specific machines they have available to perform the operation involved. These machines become the available alternatives.

#### *Describing the Alternatives*

The accountant's inactivity in the preceding step is more than offset by the role he should be asked to play in the third phase of any equipment replacement analysis—describing the alternatives. A description of the alternatives should consist of all the data required to make a cost comparison among the alternatives. The nature of these data can best be determined by giving consideration to the two categories of costs any company incurs in operating a production asset. These consist of capital costs and operating costs.<sup>1</sup>

One manner in which a cost comparison can be made is to express the respective costs in terms of a uniform annual equivalent. For purposes of illustration in this particular presentation, it will be assumed that this is the technique to be used. However, the same principles would be employed regardless of the method of analysis adhered to.

#### *Capital Costs*

The annual capital cost of owning any production facility consists of two elements. The first of these is the annual depreciation charge which, for equipment replacement purposes, should represent the amount by which the asset decreases in market value. The second is the interest charge on the investment. To compute these charges, the equipment analyst must have certain data made available to him.

<sup>1</sup> In those cases in which revenues are affected by the choice of alternative, these revenues can be looked upon as being negative operating costs.

For both the existing and proposed units of equipment, it will be necessary to determine the amount which represents the required investment in the respective alternatives. In the case of the new asset, this investment will consist of the machine's first cost plus any charges such as delivery and installation. This information can be readily obtained, and little estimating is required.

The firm's investment in an existing facility is ordinarily represented by the market value of the equipment. The only exception to this statement would be the case in which all of the following conditions are satisfied: (1) there is no market for the equipment, (2) the company will utilize the equipment for some other purpose if it is displaced from its present function, and (3) if the equipment is not displaced, the company would procure equipment of the same kind and condition for the other purpose. Under this set of conditions, the investment would be represented by the replacement cost of the equipment. In no case is the book value of the asset the relevant figure. Any excess of book value over market value represents a loss that has already taken place and not a loss that will take place when the equipment is disposed of, and any excess of market value over book value represents a gain that has already taken place. Whatever is done with the asset at this time will not alter this fact.

The analyst must also know the expected life and terminal salvage value of the equipment before being able to compute its annual capital cost. With respect to these two items of information, it can be said that the equipment analyst is often at a loss when it comes to estimating their magnitude. Service life will be influenced by the rate at which the equipment will accumulate deterioration and obsolescence. Terminal salvage value will also be affected by these factors and by the nature of the

future market for used equipment. The character of all these factors is extremely difficult to predict. However, the accountant can alleviate this problem to some degree.

A number of firms have their accounting departments make an analysis periodically of all past equipment records with a view toward determining whether their production equipment can be classified according to average service life and average salvage value expressed in terms of a per cent of first cost. With few exceptions, they have found that classes of equipment can be established and that with each class there can be associated an expected service life and salvage value.

Although a range of service lives and salvage values does exist for each category of equipment, the dispersion is not too great. The analyst, when called upon to describe an alternative in terms of service life and salvage value, first decides upon the class of equipment into which the facility falls. From the accounting department's most current report, he is able to obtain the expected life and disposal value of the asset based on past experience. This does not mean that he will necessarily use these exact figures in his computations. He may choose instead to adjust them to reflect conditions expected to exist in the future which did not prevail in the past, or in a specific case he may decide that a precise estimate can be made. But in all cases, he does have a guide to aid him in the estimating process.

Having described the alternative in terms of required investment, service life, and salvage value, the equipment analyst requires only a figure representing the minimum attractive rate of return requirement to make his computation of the annual capital cost. The determination of the interest rate is the responsibility of management. The role of the accounting department in this determination will be a

minor one and, at most, will probably be limited to its assuming the responsibility for preparing statements from which management can determine the cost of borrowed money and the amount of capital available for investment. However, these statements would probably have already been in existence, and no special effort would be required to prepare them for use in the formulation of an appropriate equipment policy.

### *Operating Costs*

The second category of costs to be considered in any equipment replacement analysis is operating costs. These might include such items as direct labor, direct material, indirect labor, routine maintenance, special repairs, power, floor space, supplies, fringe labor costs, tool costs, scrap, property taxes, and insurance. Since the magnitude of many of these items will be affected by the degree to which the machine will be utilized in the future, it is necessary that the analyst begin with an estimate of the assumed rate of production on the equipment during its service life. As with many other estimates, the best point at which to start in this case is with the existing machine's past operating rate. In those situations in which the facility is used to produce only one product, the operating rate can be expressed simply in terms of units of product per year. However, it is not uncommon to process a number of different products through a given piece of equipment. In those cases, many equipment analysts have found that no data exist to permit them to determine the past operating rate of the machine, let alone the future operating rate. It is at this point that the accountant can, once again, aid in making the replacement analysis.

Where a machine tool is used to perform a variety of operations, most companies have found that the degree of machine utilization must be expressed in terms of

machine-hours per years. The accounting departments in a few of these firms have established procedures which enable them to issue monthly or annual reports showing the number of hours each machine was in operation during the period covered by the report. The analyst, studying a particular machine for possible replacement, is then able to review these records and determine the existing facility's past average operating rate. This provides him with some clue of what the operating rate may be in the future. It may be necessary to modify historical figures to reflect anticipated changes in the future, but at least a tangible starting point has been provided by the accountant.

After an estimate has been made of the future operating rate, the next step requires that individual operating expenses be estimated. Fairly close estimates can be made of some of these items with little difficulty. For example, in the extreme case in which the existing asset is used to produce only one product, annual direct labor and direct material expenses can be determined by referring to accounting records and ascertaining the magnitude of these costs per unit of product. That is, this can be done if the accounting department has records in a form which permit determination of the actual expense incurred for the specific operation under consideration. The same expenses for the new facility can be approximated by applying hourly direct labor rates and unit direct material costs to engineering estimates of the time required to process the part on a new machine and the units of material that will be required.

At the other extreme, in which the existing asset is used to process a multitude of products, the equipment analyst must first select typical parts. Certain parts would be considered typical in the sense that they are representative of parts that have been produced in the past and will be produced

in the future. The saving expected on a typical part would be assumed to represent the saving which would be realized in the production of every part in the category of work represented by that typical part. As in the preceding case, the analyst would have to obtain information from the accounting department in order to determine the unit cost of labor and material for the operation performed on each of these parts on the old machine and would have to obtain engineering estimates to determine the expected cost for these same items on the new machine. A per cent saving would then be calculated for each part. A weighted average saving could be found which would reflect the proportion of total time and material spent in the production of each category of parts. This average per cent saving would then be used to determine average annual dollar savings in direct labor and material.

Unfortunately, the making of estimates for relevant overhead expenses presents much more of a problem. The very nature of these costs is such that they either cannot be obtained for the old machine or that their procurement would involve a prohibitive expense. This, coupled with the fact that the analyst ordinarily has no way of estimating these costs for the new machine, creates what often appears to be an insurmountable barrier to an analytic approach to equipment replacement.

As a result of a lack of reliable guides to the estimating of individual items of overhead expense, many companies follow one of two courses of action. The first of these calls for ignoring these expenses and justifying equipment replacement solely on the basis of savings in direct costs. This often results in the postponement of necessary replacements. The other course of action calls for estimating the magnitude of overhead expenses to be associated with each alternative by applying existing burden rates to the respective alternatives,

expected direct labor hours, machine-hours, or direct labor costs; the base would vary depending on the manner in which overhead expenses are allocated for accounting purposes. There can be no defense of this practice, because the overhead charged to a particular product or operation, through the use of these accounting rates, does not represent, as a rule, the increment overhead cost of producing that product or performing that operation.

It is perhaps in regard to this problem of making reliable estimates of overhead costs that the accountant can make a major contribution to the implementation of a firm's equipment policy.

Within certain limits, every item of overhead expense is either fixed, semi-variable, or variable. Those costs that are fixed can be ignored in an equipment replacement analysis, because their magnitude will not be affected by management's choice of alternative so long as the choice of alternative does not take the firm outside the limits within which fixed costs remain fixed. The fixed portion of the semi-variable costs can be ignored for the same reason. This leaves only variable costs to be taken into consideration. Insofar as equipment replacement analyses are concerned, what the analyst requires is some expression of these *variable* costs in terms of some base which he can estimate with a fair degree of accuracy. This base might be one or more of the following: (1) direct labor cost, (2) direct labor hours, (3) machine-hours, (4) direct material cost, or (5) investment in the asset. To illustrate, if the variable portion of indirect labor and fringe labor costs could be expressed in terms of a certain per cent of the direct labor cost, the equipment analyst, after having estimated the direct labor cost for the old and new machines respectively, could then compute the expected differ-

ences in indirect labor and fringe labor costs. If the variable portion of routine maintenance, supplies, and repairs could be expressed in terms of dollars per machine-hour or unit of product produced, the analyst, after having estimated the future operating rate of the machines, could then compute the expected differences in routine maintenance, supplies and repairs. If property taxes and insurance could be expressed in terms of a per cent of the investments in the respective machines, the analyst, after having determined what these investments are, could then compute the expected differences in property taxes and insurance. This is not to say that the bases used for purposes of illustration will be the appropriate ones in every situation. Every firm must investigate its own overhead expenses and determine what portion of each item is variable together with the base with which the item varies. To be of value to the equipment analyst, this base must be in terms of some quantity whose magnitude he can estimate fairly closely.

The proposal, in effect, is that special burden rates be developed for use in equipment replacement analyses. These rates might vary from department to department in a given company. Being based on averages, they might not be exact in any one study. But because of the nature of the costs involved, their use would be a great improvement over common current practice.

There can be little doubt that the accountant is the logical individual in any organization to develop these data. He is the one who has, perhaps, the clearest understanding of the nature of various costs. Also, he is the individual who is best able to evaluate past cost records. It may be that the character of existing records is such that they would be of little value for this purpose; the accountant must then

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determine what records are required and establish procedures for the development of these records.

#### *Method for Evaluating Data*

Completion of the alternative descriptions can be followed by an evaluation of the alternatives to permit selection of the most economical one. Although the accountant will not ordinarily play a role in the selection of a specific method to be employed in this evaluation, the method selected will often place certain responsibilities on the accountant. For example, a company using Joel Dean's discounted cash flow method will be interested in determining the rate of return on its investment after taxes. In this instance, management will rightfully be interested in the book value of the existing asset if its depreciation method permits it to claim capital gains and losses on the disposal of old equipment. Also, annual depreciation charges for tax purposes must be ascertained for each alternative before the effects of taxes on the rate of return can be determined. These items of information must obviously be furnished to concerned individuals by the accounting department. In other methods of analysis, other data may be required from the accountant.

#### *Post-Audit Provisions*

The last prerequisite for a sound equipment policy calls for some provision for making a subsequent check to determine whether the anticipated benefits have been realized. The benefits would be those which served as the basis on which new equipment had been procured.

The exact nature of the post-audit provision in any one company's equipment policy will be affected by the factors taken into consideration when justifying the acquisition of new equipment and by the feasibility of checking the performance of

the new equipment with respect to each of these factors. Since it was stated that estimates must be made of economic service life, terminal salvage value, rate of production, direct labor, direct material, and relevant overhead expenses, it follows that a post-audit procedure should be developed to determine whether these expectations of the future have been realized. As in the case of describing the alternatives, the accountant should play an important role in checking on the accuracy of this description.

However, it will be recalled that the suggested approach required that the quantitative expressions for some factors be based on expected or average values. These factors include service lives, salvage values, and overhead expenses as determined through the use of special burden rates. As a result, a check on these three estimates should be nothing more but a periodic study to determine whether any change is taking place in the average values of service lives, salvage values, and special burden rates rather than whether the figures used are realistic in any one case. And just as the accountant was given the responsibility for making the initial studies, so should he continue to be held responsible for furnishing the data which are required to incorporate subsequent experience in future estimates.

The factors of assumed rate of production, direct labor expense, and direct material expense differ from service life, salvage value, and overhead expenses in that they were estimated specifically for each equipment replacement study. Therefore, provisions must be made to check the accuracy of those estimates for every analysis. Insofar as assumed rate of production is concerned, the accountant is in a position to continue to prepare reports showing, for example, the number of units of product being produced on a particular facility or



the number of hours the machine is being operated. The level of utilization represented by these figures could be compared to that which was assumed in the replacement analysis.

In the case of direct labor and material, the procedure for determining current performance will also be related to the procedure used in determining the magnitude of these expenses on the old machine. The accounting department can contribute to the post-audit activity by continuing to maintain and make available records which permit determination of these expenses for the specific machine under consideration.

Ideally, a review of the rate of production, direct labor cost, and direct material cost would continue throughout the service life of the equipment. Actually, many managements find that the cost of preparing and studying required records for such an extended period of time is prohibitive. The result is that usually some shorter period of time is selected as a compromise between the cost of conducting the post-audit and the value of the information it makes available. It is interesting to note that, in some cases, it was the accounting department that played a decisive role in the selection of the length of the post-audit period by making available to management the cost of making the required investigation.

In summary, therefore, it can be seen that the function of the accountant in the post-audit procedure stems from his function in the phase of equipment policy related to the description of the alternatives. This was to be expected. In the description of alternatives, he made information available to the analyst which had as its basis the company's past experience with service lives, salvage values, operating costs, and so on. Performance reports on new equipment have as their basis what is now past experience to the

company, and, consequently, the same approach would be employed in expressing this experience in quantitative terms.

#### *The Accountant's Role in Summary*

A review of the various phases of a sound equipment analysis has indicated that the accountant is undoubtedly in a position to make a valuable contribution to this very important area of decision-making. However, no attempt has been made to leave one with the impression that the accountant is in a position to eliminate the need for judgment in studies of equipment replacement opportunities. For example, the analyst, having received data based on past service lives and salvage values from the accounting department, must still decide whether these averages should be applied in a particular case. Or past operating rates may not be representative of what will take place in the future, and the analyst may want to make some adjustments. On the other hand, management, prior to making a decision based on the analyst's approach to the problem, will find it necessary to consider such irreducibles as the nature of future products, the future availability of capital relative to the company's future need for capital, and price trends insofar as they may affect the salvage value of the old equipment, purchase cost of new equipment, and magnitude of manufacturing costs.

In brief, equipment replacement decisions are based on estimates of the future. The inherent nature of accounting data is such that they are based on the past. This does not mean that these data are of no value in the implementation of a firm's equipment policy. Instead, it means that these data must be analyzed, interpreted, and often modified. Their value lies in the fact that they do provide a guide to the future, and a better guide to the future than the past has yet to be developed.

# UNIVERSITY RESPONSES TO EDP

GARDNER M. JONES

*Assistant Professor, Michigan State University*

UNIVERSITIES contemplating the acquisition of commercial electronic data processing equipment face a situation which makes their approach at once both like and unlike that of industrial firms. The University is at one time both a cost-justifying business establishment (in its business office operations) and a purposefully loss-incurring experiment station (in its research and teaching operations). The duality of viewpoint places university administrators in a position of having to be sympathetic toward academic demands for tremendously high-priced equipment, and at the same time to be hard-boiled about cost justification, for the school's own commercial uses. The uncertainties of prospective cost savings and the relatively costly long-term manpower requirements in making ready, are good reasons for university comptrollers to take a long, slow look at EDP. The business office is thought of as a place to get a clerical job done, not as an experiment station; in contrast, an economically (and even scientifically) questionable experiment in an academic field often is sanctified by the "research" label.

It follows that the sequence of university applications of computers and computer systems has been first in the research function, second in teaching, and last of all in the universities' commercial function. It is very unlikely that the progression of college application of computers from research to teaching to business use could have occurred in any other order; certainly any kind of a new and unfamiliar device is developed experimentally, worked with and applied experimentally, before being confirmed as an everyday working tool.

## *The Past Position of the Colleges*

The response of *some parts* of our college system to computers has been tremendous, even in the early days of computer development, in which a few schools played a most important part. The Moore School of the University of Pennsylvania, Harvard University, the University of Michigan's Engineering Research Institute, and others, were pioneers in computer design and construction. Others, including some of our largest universities, are only now beginning to develop facilities and faculties in this area. The demands of military agencies for the accomplishment of gigantic calculations and their willingness to finance arithmetic machine design fitted in well with the inborn desire to tinker which characterizes electrical engineering faculties. Their experimentation led to university construction of a number of very high speed calculators which are excellent for arithmetic uses. Departments of mathematics and of physical sciences quickly learned to make use of these machines. It was some time before electronic file maintenance (accounting) machines were available. That delay, along with the irregularities of accounting requirements and the scarcity of qualified faculty, has caused business school teaching of computer uses to lag behind that of the science departments. But now the machine problem has been overcome; computer systems are being made and used widely and successfully in all kinds of business and for all kinds of records.

The EDP systems which have been developed for accounting and record-keeping are versatile systems, adequate to handle a variety of business applications: payroll, inventory, production records, receivables,

and so on. With the rapid growth in commercial installations, there has come a rapid increase in the demand for course work in these areas. Some of the schools have established excellent EDP training programs with proper facilities for instruction and faculty research. In other cases, it has been difficult to establish programs for a variety of reasons.

#### *Sources of the Dilemma*

The sources of difficulty can be summarized under four headings: (1) definition of the university's responsibility, (2) finance, (3) personnel and (4) communications. The very question of whether the university should be offering computer instruction at all has yet to be settled on some of our campuses. To the educational purist, solidly schooled in the liberal arts tradition, computer instruction smacks of vocational training. Perhaps it is vocational and technical. In practice, so is law. So is medicine. So are dentistry, chemistry, accounting, political science, and almost any of the other fields of study in the modern public-serving university.

A more widely encountered problem is the financing of new study areas. Going into EDP on anything but a superficial scale entails a considerable outlay of faculty time, physical facilities, and equipment rentals. Computer manufacturers have been extremely generous in making equipment available at reduced rates or on special terms. But on the campuses, other educationally and administratively more pressing needs cry for satisfaction. This is a postponable venture, while expansion of classrooms and dormitories and personnel to meet growing enrollments and rising prices must be met anew each year, and the updating and upgrading of salaries is the only alternative to loss of faculty. Getting and holding qualified personnel in such a specialist field is another substantial difficulty. It is the same problem that

colleges face in every specialist area. Too many deans have found that the nurture and cultivation of young Ph.D.s have resulted in a fine product—one which was promptly bought by competing universities (or by industry) at higher pay scales. Everyone wants the bright young man; the schools want him because he has the degree, industry wants him because he is likely to be intelligent, competent, and persistent, and therefore productive. The shortage of people who really know computer design, maintenance or applications make this field particularly susceptible to raiding.

The output of really effective file maintenance equipment is so recent, that a core of teachers has not been developed who can handle this specialty. Even a thorough knowledge of accounting systems is not always found among our accounting faculties; it can only be gained by a variety of experiences along with much study. If it be any comfort to teachers of accounting and of industrial management, it should be observed also that relatively few chemistry teachers have struggled with real process operating problems, and few teachers of engineering courses comprehend the human problems that create bottlenecks in design-perfect production systems.

Then there is an inadequacy of communication among the various departments on campus and between the university and industry. Within colleges, the fear of loss of control of academic programs, the suspicion that a rival department is empire-building, the thinly veiled contempt of theorists for practitioners, the imposition of really irrelevant departmental prerequisites, all too frequently stand in the way of the exchange of plans and ideas between the several campus groups. Undercurrents of rivalry paralleling those of the armed services, but on a smaller scale, exist on many of our campuses. Narrow self-interest causes us to

learn much too slowly that negativeness, secretiveness, indifference and jealousy can only hurt the total educational program of the affected school.

The confusion is not just on the campus. When professors request industry guidance in planning what to teach, no agreement is found. At one extreme, there are those who insist that the schools of business should stick to the fundamentals, giving students a solid backing in the principles applicable to their field, in speaking well and writing well and figuring well; at the opposite extreme are requests for programming, coding, detailed study of the whole list of computer applications in business. The lack of agreement is desirable, in a way, from the administrative point of view; for every one who declares the schools have gone too far, there is a countervailing testimonial that they have not gone far enough. One can find in the uncertainty about a desirable direction some justification for keeping on in the same academic pattern, which, it must be admitted, has produced some effective business leaders.

#### *Where Do We Stand Now?*

There is now no question of active demand for EDP course work. In those schools which offer courses in computer programming, electronic data processing, or similar courses, the response is more than enthusiastic. The steady growth of the market for computers and computer systems points to a growing market for people to plan and to man the new systems, to perform audits of records kept by the new systems, to develop new areas of use. The problem of qualified faculty may not be as serious as it first appears. In many of our schools, accounting, production management and industrial engineering teachers foresaw the eventual need and prepared on their own initiative to be ready when the time should come. The degrees

of help and encouragement from their schools varied from none at all to subsidization of training courses and leave time to study or obtain experience in working installations. In many cases, individual teachers were ahead of their administrators in foreseeing the direction that instruction might take.

At the present time, there are numerous teachers who could do a creditable job of teaching EDP from a book point of view, but who need that added practical approach which can come only from experience. Industry, the ultimate beneficiary of superior teaching, can do a substantial service to the colleges by offering opportunities for teachers who are really serious about EDP courses and applications, to work in their installations. Some professors could use their sabbatical leaves profitably to study this area; however, it is the younger men, not eligible for sabbatical, who typically are eager to learn the details of EDP and related arts.

One of the largest obstacles, now, to university offerings in EDP is the cost of equipment. Even where manufacturers generously offer equipment at discount for educational use, the net rentals are substantial, and only clearly indicated wide use in several areas could possibly offer economic justification for the necessary outlay.

Some schools (a minority) do have that wide, multi-department instruction, using equipment which is suitable for both accounting system and computational work. Some other schools which could institute university-wide programs, using commercially available EDP equipment, already have the other type of computer, built earlier for large-scale arithmetic. In these cases, arguments for acquisition of business-type computer systems are weakened by the prospect that they will not be used to the fullest extent. Without prospective wide use, the outlay will not be



made; but without the outlay for equipment, an attempted EDP teaching program will be inadequate.

Another need in academic departments offering EDP courses is case materials. There are hundreds of industry experiences in planning computer system installations, and thousands of big and little applications, each one a little different from all others. The colleges need to devote some faculty time to collection and adaptation of these real cases, to get their EDP courses out of the principles stage and into the problem stage. Industrial firms can do the colleges another good turn by allowing teachers access to their company EDP histories and to their manuals.

#### *The Business of the Business Office*

Now it happens that the university business office engages in the same kind of operation that is of concern to the (academic) accounting department. There are payrolls, property and personnel records, expense distributions, cost finding and a variety of system problems of interest to the accounting teacher. There are the registrar's files which resemble in many ways an insurance company's customer files. For its business uses, the university does not need a tremendously agile arithmetic machine; it does need a versatile file-searcher and posting device which is capable of a little arithmetic. This is the same equipment, with the same applications as in industry, and the functions subject to its employment operate under the same atmosphere of expense limitation as do the so-called nonproductive activities in industry. Clerical operations in a university are big business; as a school increases to 12,000, 15,000 or 25,000 students, the volume of records increases more than proportionately, taxing physical facilities and supervisory capacities. To the extent that reliable electronic devices can supplant clerical

help that is subject to the human limitations inherent in temporary student employees, change-resistant old maids, and maternity-susceptible wives of students, there is some promise of alleviating the perennial personnel problem in record-keeping.

#### *The Need for Internal Methods Research*

It is time that the universities turned some research attention toward their own housekeeping activities. The high-volume non-teaching operations in an educational institution are the registrar's function, plant operation, and the business office. These are precisely the areas which have received the least attention as to methods of doing things, mechanization, motivation, and organization. Operation of a college is an ideal laboratory for application of the whole area of management sciences. An increase in housekeeping efficiency and effectiveness could result from diversion to internal methods research of only a part of the research funds expended annually by universities on far less rewarding topics. Experimentation in the application of electronic equipment to business-office records and to registrar's records is only one of the potentially fruitful areas of applied research within the university organization. Some experimentation in the quasi-mathematical approaches to alternatives in such areas as inventory maintenance, personnel planning, course and facility planning, and building programs, is sorely needed. Faculty advocates of scientific management, searching for places to apply their knowledge, need not go far afield for their laboratory.

#### *Joint Business and Academic Facility Use*

Now if both the business offices and the academic departments of the business schools have need for the tools for experimentation in and application of new office



technology; if neither alone can clearly justify the outlay for the tools, what is more reasonable than that they should join together in half-academic, half-business installations? In industry, we find joint usage by accounting and production control, by accounting and engineering, or accounting and research functions. Such joint usage is a well-established pattern; in some firms the discovery of more and more new uses for computer systems results eventually in outgrowing this arrangement, and an additional unit is acquired for one of the users. The pattern of control under joint usage varies. Control by accounting is perhaps most typical, in view of numerous deadlines for accounting activities, such as payroll and certain tax reports. There is a danger here always to be guarded against: the assumption by the controlling unit that this is "our" machine, and the gradual crowding out of the other member of the partnership. There is a history of this sort of thing happening in schools with computing equipment under the control of a single department, and it is one of the dangers of an attempt at joint use.

The fact of joint usage of a facility does not in any way minimize its total cost. Money is still required to meet that total cost. Nevertheless, this joint approach does offer a strong justification for undertaking a full-scale EDP system in the university. It is a salable proposition, where an effort to justify on the basis of unprovable savings in the university's commercial function would not be tenable.

### Conclusions

The demand for EDP course work is here; the need to up-date business methods in our colleges is here. The approach indicated here may be one way to acquire the physical facilities to do both jobs. To meet the need for qualified faculty, more teachers must extend their educational backgrounds to include the whole "management science" area and specifically the EDP specialty. Much more research attention is owed to internal methods and procedures in the university. Business faculty and business office personnel have much to gain by joining forces in this often neglected area of common interest.

## WHAT CONSTITUTES MATERIAL COST OF PRODUCTION?

W. B. CASTENHOLZ

*Educational Director, Universidad LaSalle de Sud America*

SINCE 1924, I have been very vitally interested in this cost question and, as shown in the November, 1955, Uniform C.P.A. examination, it appears that a like interest must be in the minds of those Certified Public Accountants who are concerned with cost accounting procedures. The question referred to in the above examination is expressed in part as follows: "List five items other than the invoice price that might be included as a part of (material) cost," etc., (Question Number 4 of the "Examination in Theory of Accounts—November 1955").

It may be true that my concepts concerning material costs in manufacturing, as the materials to be used enter the production centers, have been heavily influenced or, in fact, determined by the economists' concept of "place value." This briefly means that the material cost of any commodity to be used in manufacturing is composed of those expenditures required to put the commodity into the place where it is to be worked upon. It is obvious that the mere invoice price, plus in-freight and delivery charges to a manufacturer's receiving department, are not the entire money values involved to bring the materials to the manufacturing centers, that is, to express its manufacturing "place" value. The materials to be manufactured must also be purchased, received, stored and delivered to the production centers; none of these expenditures are "manufacturing" costs, regardless of the fact that some manufacturers include them as part of manufacturing expense or burden. The latter practice is, decidedly, an improper incidence of expense.

The answer to the C.P.A. examination question appearing in *The Journal of Accountancy* includes as the first five items:

- a. Transportation
- b. Insurance while in transit
- c. Purchasing department costs
- d. Receiving department costs
- e. Storage costs, and is then followed by two items of only very special significance, namely, (f) interest or financing charges and (g) import duties.

This discussion of the answers given in *The Journal of Accountancy* apparently is based on the assumption that the costs of purchasing, receiving and storage should, by some method or other, be added to the materials purchased upon their receipt by the manufacturer. I want to question such a procedure because, at that time, it does not constitute a proper incidence of expense except as to purchasing and receiving; storage service has not been rendered, at that time, yet inventories should be and usually are debited as materials are received. Should we then debit inventories with the invoice price plus in-transportation and, on some basis, with what might be considered a proper amount to cover purchasing and receiving costs and, later, deal with an allocation of storage costs?

Doubtless this could be done and the storage costs could be applied later as the materials were withdrawn from storage to be put into production. But, I protest against such a procedure (1) because of the book work involved and (2) because of the difficulties of computing proper percentages to use for the allocation of purchasing costs and receiving costs to the invoices and, hence, to the involved debits

to material inventory accounts. A lot of questions would be involved, such as:

- (a) should the amount to cover the purchasing expense be on the basis of the money value of the vendor's invoice, or
- (b) on the basis of a predetermined cost of placing an order?
- (c) should the receiving department expense allocation be based upon the time required to handle the materials received or upon the weight of the materials? Weight might or might not influence handling, especially in cases where mechanized equipment was used for some materials and not for others.

It would, in my opinion, be quite sound to determine on an *annually budgeted basis* what the total amount of the costs of purchasing, receiving and storing raw materials and stores were, and then relate these percentage-wise to the total annual costs of materials and stores used. To establish the total material used for a year would be quite simple, because past years' credits to the inventory of raw materials and stores, as modified by any expected increases or decreases therein, for a current year, would give a figure very approximately correct. This would be especially true in the case of manufacturers operating on a budgetary control basis. The annual costs of purchasing, receiving and storing would be even more simple of determination because a very large amount of these costs consists of fixed charges, such as:

- (1) building occupancy costs (depreciation, insurance and taxes on building space occupied by the purchasing, receiving and storage departments);
- (2) the depreciation, insurance and taxes on the fixed assets resident in and used by the above three departments;
- (3) the fixed salaries and wages (at least, total "stand by" wages) of these departments.

The variable expenses, such as repairs, additional wages, supplies and telephone could be estimated for a year for each of the departments.

Suppose that such computations showed total cost of purchasing, receiving and storing for a year to be \$250,000, and total direct materials and stores used (or to be used) for a year amounted to \$25,000,000: then the costs referred to could be absorbed as materials were put into production (as evidenced by the priced requisitions of materials withdrawn), by adding 1 per cent thereto and charging *Goods in Process* account therewith without disturbing the inventories of raw materials and stores accounts. These latter would be credited at their invoice price (i.e., delivered cost) as shown by the priced material requisitions used for material withdrawals. In this manner, the inventories of raw materials and stores would always remain at delivered cost, as *Goods in Process* account was charged at that cost. The costs of purchasing, receiving and storage would then be charged to *Goods in Process*, as an additional material cost.

The above procedure means, of course, that the costs of purchasing, receiving and storage, as these occurred each month, would be charged to an account but labeled as *Unapplied Material Burden*. These costs, obviously, would be absorbed into *Goods in Process* each month on the basis of the value of the materials used. The following would be the entry (assuming \$100,000 materials used in January):

<i>Goods in Process</i> (rate 1 per cent of Materials used) ..	\$1,000.00
<i>Unapplied Material Burden</i> .....	\$1,000.00

The procedure recommended in *The Journal of Accountancy* answers would involve two steps and, in my opinion, would probably incorrectly inflate the inventory of raw materials and stores at the time of the receipt of materials. In addition, an amount would be added as the materials were withdrawn for production. Where the processes and time of storing materials are not well controlled and standardized,

it is possible that a difference in storage costs of materials would exist which might not be apparent when only purchasing and receiving costs are considered. Yet, the differences in storage time and space might also appear in connection with receiving costs to which the discussion in *The Journal of Accountancy* gives no consideration.

Costs	
Purchasing.....	\$ 70,000
Receiving.....	80,000
Storage.....	100,000
Total.....	<u>\$250,000</u>
Annual Usage of Mat'l.....	\$25,000,000
Average	
Rate per \$1 of usage.....	1%
Rate	
Yields for	
Absorption.....	\$250,000

Except in a very few situations, the differences in material and space occupancy, and how these might also affect purchasing and receiving in other respects are neutralized and counter-balanced by using the total annual costs of purchasing, receiving and storage and relating these to the total annual dollar usage of materials at delivered cost. The few exceptions referred to exist in those cases where a manufacturer makes two distinctly different products, involving, for one, a mass of very bulky raw materials of relatively small delivered cost and, for the other, small raw materials and stores of relatively high delivered cost. In such a case it would be desirable to use two rates for the absorption of purchasing, receiving and storage costs. To illustrate, assume the following:

(1) Company A's annual cost of purchasing is.....	\$ 70,000
(2) Company A's annual receiving cost is...	80,000
(3) Company A's annual storage cost is...	100,000
Total for the three.....	<u>\$250,000</u>

Further, assume that Company A uses

annually \$5,000,000 of the bulky material and \$20,000,000 of the more valuable but small material; that the bulky material requires twice as much handling in receiving and occupies three-quarters of the storage space. In such a case it will be fair to allocate the costs of purchasing, receiving and storage to the two classes of materials as follows:

Bulky Mat'ls.	Small Mat'ls.	Allocation Basis
\$ 14,000	\$ 56,000	Value of Mat'l. used
53,333	26,666	Wt. or Bulk of Mat'l.
75,000	25,000	Space Occupied
<u>\$142,333</u>	<u>\$107,666</u>	
\$5,000,000	\$20,000,000	
2.847%	.5383%	
	Approx.	
\$142,350	\$107,650	In round sums

Hence, as the materials at delivered cost are used in production, say for January, \$100,000 (\$40,000 bulky and \$60,000 small) the entry would be

Product in Process (Bulky)...	\$1,138.80
Product in Process (Small)...	322.98
Unapplied Material Burden.....	\$1,461.78

If \$5,000,000 of the bulky materials and \$20,000,000 of the small materials were used in production in the year, the entire \$250,000 of purchasing, receiving and storage costs would be absorbed as material costs. If, at the end of the year a balance (either debit or credit) remained in the Unapplied Material Burden account, that balance would be closed into the Cost of Sales account for the two types of products involved.

To justify as well as to understand the above proposed procedures for the absorption of purchasing, receiving and storage costs into the material costs of production, let us consider these costs, as the wholesaler does, as warehouse costs. A wholesaler usually carries heavy stocks and must and does include in his selling price the costs of purchasing, receiving

and storing these stocks. Hence, the manufacturer using such stocks pays the wholesaler for purchasing, receiving and storing them plus any transportation charges and a part of the wholesaler's profit, thereby giving the stocks purchased an immediate manufacturing "place" value; the latter being charged, upon receipt, either to an inventory account for immediate clearance into *Goods in Process* account or, directly to that account as a material cost. Now it is apparent, if a manufacturer decides to buy directly from a basic producer and store the stocks himself, his purchasing, receiving and storage costs will create for him a manufacturing "place" value, usually, of course, at a lower price than he would pay to a wholesaler because the manufacturer has established thereby his own warehouse. These facts are the justification for regarding purchasing, receiving and storage costs as part of material cost.

Apart from this justification, an equally important reason for the treatment proposed is that, if not so treated, purchasing,

receiving and storage costs will have to be *unsoundly* and *incorrectly* regarded as either manufacturing expense or as administrative expense. If considered manufacturing expense, it would be an almost impossible task to allocate these costs to the many production centers with any degree of accuracy. We know that, in most manufacturing companies, manufacturing expenses (or burdens) are absorbed into product costs through direct labor hour rates. Immediately, the question comes to mind—"what about automatic-machine production centers where there is no direct labor?" Again, some production centers have a lot of direct labor hours but use relatively high cost materials; other centers use relatively high cost materials but direct labor hours are few. Anyone, considering carefully only these few conditions, will see at once that purchasing, receiving and storage costs could not be absorbed, except *incorrectly*, as manufacturing expense. It just cannot be done. These costs have nothing to do with the manufacturing operations *per se*.



# LIST OF RESEARCH PROJECTS IN ACCOUNTING: 1956-1957

JAMES S. SCHINDLER  
*Director of Research*

THE 1956-1957 list of research projects is the eighth such list published in recent years.<sup>1</sup> The annual totals of completed graduate student projects reported in recent years are:

Year	Master's Theses Completed	Doctor's Dissertations Completed
1950-1951	Not available	10
1951-1952	145	18
1952-1953	154	28
1953-1954	147	18
1954-1955	138	21
1955-1956	153	23
1956-1957	127	34

Master's theses are reported only upon completion. All doctoral dissertations and faculty research projects either in progress or completed during the period are reported.

Abstracts of many of the doctoral dissertations listed herein will appear in subsequent issues of THE ACCOUNTING REVIEW. Copies of doctoral dissertations and master's theses frequently can be secured on interlibrary loan from the library of the school where they were submitted. When copies are not permitted to be withdrawn, libraries usually can supply photostatic copies or microfilm reproductions at reasonable costs.

The subjects classification used for previously published reports on research projects is continued in this listing. Each project is listed only under one classification, although several might well be classified under two or more headings.

## SUBJECT CLASSIFICATION

- I. THEORY OF ACCOUNTING
  - A. Income Determination
  - B. Price Level Changes
  - C. Inventory Pricing and Valuation
  - D. Fixed Asset Valuation and Depreciation
  - E. Intangibles
  - F. Investments
  - G. Current and Fixed Liabilities
  - H. Income Distribution
  - I. Capital Stock and Surplus
  - J. Partnership Problems
  - K. Other
- II. HISTORY OF ACCOUNTING
  - A. Development of Accounting
  - B. History of Particular Firms or Industries
- III. REPORTS AND STATEMENTS
  - A. Financial Statements—General
  - B. Consolidated Statements
  - C. Analysis of Statements
  - D. Other
- IV. PUBLIC ACCOUNTING
  - A. Auditing
  - B. Profession of Accounting
  - C. C.P.A. Examinations
  - D. Selection of Personnel
  - E. Other
- V. ACCOUNTING FOR INDUSTRIAL, MERCANTILE AND FINANCIAL ENTERPRISES
  - A. Accounting Systems
  - B. Budgeting
  - C. Cost Accounting—Manufacturing
  - D. Cost Accounting—Distribution
  - E. Controllorship and Managerial Accounting
  - F. Internal Auditing
  - G. Case and Industry Studies
  - H. Machine Methods
  - I. Other
- VI. ACCOUNTING FOR NON-PROFIT ENTERPRISES
  - A. Governmental Accounting
  - B. Institutional Accounting
  - C. Fiduciary Accounting

<sup>1</sup> The earlier lists appeared in the July 1951, January 1952, April 1953, April 1954, April 1955, April 1956, and July 1957 issues of THE ACCOUNTING REVIEW.

# **VII. LEGAL AND GOVERNMENTAL ASPECTS OF ACCOUNTING**

- A. Taxation
- B. Regulation
- C. Contracts and Contract Renegotiation
- D. Other

# **VIII. REORGANIZATION AND LIQUIDATION**

- A. Insolvencies and Bankruptcies
- B. Capital Readjustments and Reorganizations

# **IX. EDUCATION**

# **X. MISCELLANEOUS**

## **I. THEORY OF ACCOUNTING**

### **A. INCOME DETERMINATION**

#### *Doctors*

- A Comparative Study of Legal and Accounting Concepts of Income, Oscar M. Kriegman, *University of Illinois*, (In Progress)
- Economic Concepts of Income and Profit and Their Relation to Accounting Theory, Rudolph Schattke, *University of Illinois*, (In Progress)
- Concepts of Income, an Examination and Evaluation, George H. Sorter, *University of Chicago*, (In Progress)
- The Nature of the Business Enterprise and Its Implications in Accounting Theory, Helmi M. Nammer, *University of Illinois*, 1957
- The Concept of Operations and Its Influence in Income Determination and Income Theory, Suthes Singhasaneh, *University of Illinois*, 1957
- Relevance to Income Determination of Product and Period Analysis of Enterprise Activities, William J. Schrader, *University of Washington*, (In Progress)
- Matching Revenues with Costs, Reed Storey, *University of California (Berkeley)*, (In Progress)
- Periodicity and the Provision for Federal Income Tax, Paul Walgenbach, *University of Illinois*, (In Progress)
- An Evaluation of the Concept of Realization and Its Application in Accounting, Floyd W. Windal, *University of Illinois*, (In Progress)
- Capital Maintenance and Its Implications in Income Determination, Ben L. Forbes, *University of Illinois*, (In Progress)
- Some Selected Problems in Accounting for Executive Compensation, Norman S. Cannon, *Columbia University*, 1957
- Accounting for Executive Stock Options, Daniel L. Sweeney, *University of Michigan*, (In Progress)

#### *Masters*

- Some Legal Aspects of the Accounting Concepts of Capital and Income, Harold E. Arnett, *University of Illinois*, 1957
- An Examination of Certain Aspects of Variation Between the Entity Theory and Accounting Practice, Clarence G. Avery, *University of Illinois*, 1956
- Are Capital Gains Income? An Opinion Approach, Marlynn K. Bohman, *University of California (Berkeley)*, 1957
- Accounting Concepts of Net Income, Alan C. F. Leggett, *Boston University*, 1957
- The Treatment of Extraordinary Items in the Income Statement, Donald H. Taylor, *Louisiana State University*, 1957

### **B. PRICE LEVEL CHANGES**

#### *Doctors*

- The Significance of the Effect of Price Level Changes on Accounting Data, Bernard F. Ashbacher, *University of Illinois*, (In Progress)
- An Evaluation of the Alternative Concepts for Measurement of Business Income, Richard C. MacAllister, *University of Florida*, (In Progress)
- An Evaluation of the Usefulness and Limitations of Accounting Data Adjusted for Price Level Changes, Henry M. Steele, *Indiana University*, 1957

#### *Masters*

- Accounting and the Fluctuating Value of the Dollar as It Is Related to the Steel and Petroleum Industries for the Period 1925-1954, Lawrence J. Schoenberg, *University of Pennsylvania*, 1957
- Impact of Inflation on Corporate Earning Rates, Howard Wright, *Michigan State University*, 1957

### **C. INVENTORY PRICING AND VALUATION**

#### *Doctors*

- An Analysis of Current Theory and Practice Regarding the Elements of Cost Included in Inventory by Manufacturers, Robert J. Smith, *Indiana University*, 1957

#### *Masters*

- Inventory Pricing, Eugene U. Mills, *Boston University*, 1957
- A Critical Examination of the Last-in, First-out Method of Inventory Pricing, Robert G. Roth, *State University of Iowa*, 1957

## D. FIXED ASSET VALUATION AND DEPRECIATION

## Doctors

- Depreciation in the Public Utility Industries—a Reconsideration, Donald L. Anderson, *University of Minnesota*, (In Progress)
- Concepts of Depreciation and Their Implications in Accounting Theory and Practice, Phayom Bharilai, *University of Illinois*, 1957
- Depreciation Policies of the Steel Industry for 1940-56 with Special Emphasis on the Adequacy of Depreciation Allowances to Cover Replacements, Clark E. Chastain, *University of Michigan*, (In Progress)

## Masters

- Some Examples of Current Practice with Respect to Depreciation and Amortization, John W. Blaisdell, *University of California (Berkeley)*, 1957
- An Evaluation of Recently Suggested Schemes for Computing Depreciation, Lindley E. Grams, *Florida State University*, 1957
- Recent Developments in Corporate Depreciation Policies, Paul W. Meloy, *University of Pennsylvania*, 1957
- An Inquiry into Accountants' Views Concerning Depreciation During the Years 1920-1955, Elmer M. Kunkel, *University of Tulsa*, 1957
- Accounting Aspects in the Depreciation of Emergency Facilities, Paul J. Hellberg, *Temple University*, 1957
- Depletable Interests in Oil and Gas in Place, Lease and Well Equipment and Related Depletion and Depreciation Methods, Paul A. Hope, *Southern Methodist University*, 1957

## E. INTANGIBLES

## Doctors

- An Examination of Contemporary Practices in Accounting for Intangible Assets, Bevie T. Sanders, *University of Texas*, 1957.

## Masters

- An Analysis and Evaluation of Accounting Practices Relating to Goodwill, Albert E. Casper, Jr., *University of Texas*, 1957
- The Disposition of Research and Development Costs, Rexford C. Hauser, *Louisiana State University*, 1957
- Accounting for Industrial Research, John H. Holmes, *Temple University*, 1957

## H. INCOME DISTRIBUTION

## Masters

- An Accounting Study of the Nature and Classi-

fication of Corporate Dividends, Neil L. Cowen, *University of Illinois*, 1957

## I. CAPITAL STOCK AND SURPLUS

## Doctors

- A Study of the Factors Influencing the Accounting Concept of Surplus, Billie L. Barnes, *University of Illinois*, (In Progress)

## K. OTHERS

## Doctors

- The Entity Concept of the Firm: A Critical Appraisal, Mrs. Rosa M. Bodenhamer, *University of Missouri*, 1957
- The Going Concern Concept in Accounting, Dorsey E. Wiseman, *University of Illinois*, 1957
- An Integration of Finance and Accounting Theory, Lyle E. Jacobsen, *University of Illinois*, 1957
- Accounting Implications in Marginal Economic Theory, Robert G. Stevens, *University of Illinois*, (In Progress)
- The Extension of Accounting Techniques and Methodology Beyond the Enterprise, Werner G. Frank, *University of Illinois*, (In Progress)
- An Analysis of Annual Reports of Selected Industrial Corporations for Compliance with Certain Criteria of ARB #43, Edgar B. Yager, *Indiana University*, 1957
- A Critical Evaluation of the Return on Investment Concept as a Measure of Management Efficiency, E. J. Blakely, Jr., *University of Texas*, (In Progress)

## Masters

- Accounting Problems of Foreign Currency Devaluations, Gerhard G. Mueller, *University of California (Berkeley)*, 1957

## II. HISTORY OF ACCOUNTING

## A. DEVELOPMENT OF ACCOUNTING

## Doctors

- Development of American Accounting Thought, 1875-1925, Brother Patrick Hance, S.M., *Catholic University of America*, (In Progress)
- Development of Accounting in the United States, Keith R. Heller, *University of Minnesota*, (In Progress)

## Masters

- American Accountants and Their Contributions to Accounting Thought, 1900-1930, Reverend John J. Kahle, *Catholic University of America*, 1957

The Historical Development of Financial Statements in the United States Between 1900-1933, Prakong Nuawmalee, *University of Pennsylvania*, 1957

B. HISTORY OF PARTICULAR FIRMS OR INDUSTRIES

Doctors

George S. Olive & Co.: A History of a Regional Public Accounting Firm, Robert M. Jennings, *Indiana University*, (In Progress)

III. REPORTS AND STATEMENTS

A. FINANCIAL STATEMENTS—GENERAL

Doctors

A Re-examination of the Structure of the Balance Sheet, J. Herman Brasseaux, *Louisiana State University*, (In Progress)

An Analysis of Annual Reports of Selected Industrial Corporations for Compliance with Certain Pronouncements of the American Institute of Certified Public Accountants, L. Vann Seawell, *Indiana University*, (In Progress)

A Study of Notes to Financial Statements in Corporate Annual Reports, Thomas G. Secoy, *University of Illinois*, (In Progress)

The Concept of Full Disclosure in Current Accounting Practice, Delbert E. Williamson, *Stanford University*, (In Progress)

Masters

An Analysis of the Treatment of Replacement Costs in Corporate Annual Reports, Ernest J. Pavlock, *University of Pennsylvania*, 1957

Faculty Research

Adequacy of Corporate Reporting for Investment Decision-Making, Alan R. Cerf, *University of California (Berkeley)*, (In Progress)

C. ANALYSIS OF STATEMENTS

Masters

A Survey of Accountants' Analyses of Variations in Gross Profit, Martha Ann Jones, *University of Illinois*, 1957

D. OTHER

Doctors

A Reformulation of the Theory of the Funds Statement, Howard M. Daniels, *University of Texas*, 1957

A New Funds Statement: Statement Summarizing Financial Transactions, Robert L. Kvam, *Louisiana State University*, 1957

Financial Reports of Labor Unions, George Kozmetsky, *Harvard University*, 1957

Masters

An Examination of the Uses of the Statement of Resources Provided and Applied, Martin J. Lehr, *University of Illinois*, 1957

IV. PUBLIC ACCOUNTING

A. AUDITING

Doctors

Legal Liability of Public Accountants, R. Glen Berryman, *University of Illinois*, (In Progress)

Masters

A Study of the Language and Content of Audit Reports, Gerald L. Cleveland, *University of Minnesota*, 1957

The Standard Program as a Basic Approach to the Development of Audit Programs, J. C. Ray, *University of Tulsa*, 1957

Punched Card Accounting and Its Effect upon the Public Accountant's Audit, Thomas A. Falin, *University of Pennsylvania*, 1957

Public Accountant's Legal Liability, William H. Lewis, *The Ohio State University*, 1957

The Legal Liability of the Public Accountant, Stanley Scheinman, *City College of New York*, 1957

Faculty Research

Compliance with Auditing Standards in Respect to Expression of Opinion on Financial Statements, Alan R. Cerf, *University of California (Berkeley)*, (In Progress)

B. PROFESSION OF ACCOUNTING

Doctors

A Study of the Nature and Development of Auditing Standards, Mahmoud Abdel-Moneim, *University of Illinois*, (In Progress)

Academic Preparation for Public Accounting, Robert A. Meier, *University of Chicago*, 1957

A Suggested Long-Range Professional Program in Public Accounting at the Graduate Level, John B. Ross, *University of Alabama*, (In Progress)

A Survey and Evaluation of Management Services by Practicing Certified Public Accountants, James E. Redfield, *University of Texas*, (In Progress)

A Comparative Study of Certain Accounting Institutions and Practices in England and in the

United States, Bro. LaSalle Woelfel, *University of Texas*, 1957

#### Masters

An Analysis of the Seaboard Case and Its Implications for Public Accounting, Harold A. Buesing, *University of Illinois*, 1957

The Profession of Public Accounting and the Small Business, Henry D. Hoig, Jr., *University of Pennsylvania*, 1957

A Discussion of Some Aspects of Public Accounting Education, Martin Cohen, *University of Pennsylvania*, 1957

Women in Public Accounting, Joyce Smolley, *University of Texas*, 1957

#### Faculty Research

Survey of the Public Accounting Profession in California, A. B. Carson, *University of California (Los Angeles)*, (In Progress)

Public Accounting in South Dakota, Harry E. Olson, *State University of South Dakota*, 1956

Motivation and Education for Public Accounting, Harry Simons, *University of California (Los Angeles)*, (In Progress)

#### C.C.P.A. EXAMINATIONS

##### Masters

A Comparison of British and American Professional Accounting Examinations, Floyd Moon, *University of Illinois*, 1957

#### V. ACCOUNTING FOR INDUSTRIAL, MERCANTILE AND FINANCIAL ENTERPRISES

##### A. ACCOUNTING SYSTEMS

##### Masters

Accounting System Installation, Wayne La Var Heugly, *University of Utah*, 1957

Case History of Integrated Order Processing, Harland L. Mischler, *The Ohio State University*, 1957

An Evaluation of Inventory Accounting (Monetary), Joseph T. Neville, *University of Utah*, 1957

##### B. BUDGETING

##### Doctors

Cost Accounting and Budgeting Problems in Aircraft Manufacturing, Richmond O. Bennett, Jr., *University of Texas*, 1957

A Study of the Use and Limitations of Budgetary Control Systems for Marketing, Joseph W. Newman, *Harvard University*, (In Progress)

A Survey of Planning and Control Practices Employed by Leading American Companies, with Special Emphasis on Budgeting, B. H. Sord, *University of Texas*, (In Progress)

##### Masters

Budgetary Control of Maintenance Costs, Carl T. Beckett, *The Ohio State University*, 1957

Budgetary Control of Distribution Costs, Viyada Chakrabandhu, *University of Pennsylvania*, 1957

Budgetary Control of Labor Costs in Manufacturing Industries, John D. Edwards, *Louisiana State University*, 1957

The Problems and Requirements of a Manufacturing Firm Intending to Change from a Fixed Budget to a Variable Budget System, Harry E. Riddell, *Temple University*, 1957

Application of the Principles of Flexible Budgeting to the Inside Machine and Electrical Shops of the Philadelphia Naval Shipyard, Andrew J. Smolenski, *University of Pennsylvania*, 1957

#### C. COST ACCOUNTING—MANUFACTURING

##### Doctors

An Appraisal of Direct Costing, Carl Dennler, Jr., *University of Wisconsin*, (In Progress)

Direct Costing in Theory and Practice, Gerald O. Wentworth, *Stanford University*, (In Progress)

Cost Accounting for the Mining, Milling, and Smelting of Copper Ores, Kemper W. Merriam, *University of Texas*, 1957

An Inquiry into Some of the Cost Determination Problems of the Forest-Products Industries of Arkansas, Nolan E. Williams, *University of Texas*, 1957

##### Masters

The Allocation of Corporate Overhead to Multi-Plant Operations, George H. Cassidy, Jr., *University of California (Berkeley)*, 1957

An Outline of the Development of Standard Costing, P. Michael Friedenbach, *University of California (Berkeley)*, 1957

The Control of Costs in a Multiple-Product Processing Industry by the Utilization of a Standard Cost System, Andrew P. Hubert, *Temple University*, 1957

Process Costing for Single and Multiple Departments, John O. Lange, *University of Texas*, 1957

The Various Levels of Capacity Utilized in Establishing Predetermined or Standard Burden Rates, Harry J. Schmieg, *Temple University*, 1957



## D. COST ACCOUNTING—DISTRIBUTION

## Masters

- Methods of Allocating Distribution Costs to Products, Andrew H. Weissler, *City College of New York*, 1957
- Distribution Cost Analysis: A Guide to Marketing Policy, Anita Zommick, *City College of New York*, 1957

E. CONTROLLERSHIP AND  
MANAGERIAL ACCOUNTING

## Doctors

- General Purpose Cost Accounting System as a Basis for Management Decisions, Morton Backer, *University of Pittsburgh*, (In Progress)
- Quantitative Analysis as Applied to Capital Budgeting, Victor H. Brown, *University of Buffalo*, 1957
- The Guaranteed Annual Wage and Accounting for Decision Making, Robert K. Jaedicke, *University of Minnesota*, 1957
- Costs for Planning Decisions, Philip T. Meyers, *University of Texas*, (In Progress)
- Use of the Rate of Return on Investment in the Evaluation of Performance, William Rotch, *Harvard University*, (In Progress)
- Use of Bayes Decision Theory in Quality Control, Arthur Schleifer, *Harvard University*, (In Progress)
- Principles of Accounting System Design to Effect Control, James B. Bower, Jr., *University of Texas*, (In Progress)
- An Investigation of Operations Research and Some of Its Effects upon Accountancy, Charles F. Nagy, *University of Alabama*, (In Progress)
- Management Practices with Respect to Internal Transfer Pricing in Large Manufacturing Companies, Williard E. Stone, *University of Pennsylvania*, 1957
- Non-Factory Costs and the Period Concept: An Analysis of Certain Accounting Practices in Manufacturing Enterprises and their Effect on Reports to Marketing Management, Richard S. Woods, *University of Pennsylvania*, 1957
- Leaseholds—Their Disclosure and Financial Consequence, Roy E. Tuttle, *University of Minnesota*, (In Progress)
- The Impact of the Choice of Base and Method of Amortization of Long-Term Cost on Financial and Other Business Policies, Isaac N. Reynolds, *University of North Carolina*, 1957

## Masters

- A Critical Analysis and Evaluation of the Con-

trollership Function, Don T. DeCoster, *University of Texas*, 1957

- An Investigation of Some of the Requirements of Accounting Reports for Managerial Uses, Howard Harrod, Jr., *University of Illinois*, 1957
- Financial Statements for Managerial Guidance, Herbert Jaffe, *City College of New York*, 1957
- An Analysis of Internal Reporting with Emphasis on the Necessity of Changing Internal Reports, Richard C. Marx, *University of Pennsylvania*, 1957
- The Cost Accounting System as a Decision-Making Model, Grange T. Simons, *Massachusetts Institute of Technology*, 1957
- Return on Investment: An Analysis of its Application to the Control of Divisional Operations, Charles L. Brown, *University of Pennsylvania*, 1957
- Adoption of Accounting Systems to Provide Sales Management Data for Industrial Corporations, Jack O. Murray, *Temple University*, 1957
- Accounting Control of the Financial Pattern of a Corporation, Donald F. Sontag, *University of Pennsylvania*, 1957
- Control of Research and Development Cost, Francis A. Thibodeaux, *Louisiana State University*, 1957
- An Analysis of Interdepartmental Transfer Pricing, Samuel Appleton, *Massachusetts Institute of Technology*, 1957
- The Accountant in Management Services, Clara C. Lelievre, *University of Alabama*, 1957
- The Adequacy of Audit Reports for Use by the Lending Banker, David J. Ralff, *University of Pennsylvania*, 1957

## Faculty Research

- Decision and Control, Richard Rothschild and Paul Kircher, *University of California (Los Angeles)*, (In Progress)

## F. INTERNAL AUDITING

## Masters

- An Analysis of the Potential Development and Limitations of Internal Auditing, James A. Hanley, Jr., *University of Illinois*, 1957
- The Selection and Training of Internal Auditors, Jack Van Camp, *University of Pennsylvania*, 1957

## Faculty Research

- How the Smaller Business Utilizes Internal Auditing Functions, Robert H. Van Voorhis, *Louisiana State University*, 1957

## G. CASE AND INDUSTRY STUDIES

## Doctors

- An Analysis of the Cost of Industrial Research  
DeWitt C. Dearborn, *Harvard University*, 1957
- Procedures of Controlling Capital Expenditures in the Heavy Equipment Industry, Erich A Helfert, *Harvard University*, (In Progress)
- Financial and Accounting Problems in the Expansion of the Natural Gas Industry, Paul LaGrone, *University of Alabama*, (In Progress)
- Life Insurance Accounting, James W. Noehl, *University of Minnesota*, (In Progress)
- Internal Control Practices of Missouri Banks, Ralph Skelly, *University of Alabama*, (In Progress)
- Cost Analysis of Mass Transportation in Pittsburgh, Frank Wright, *University of Pittsburgh*, (In Progress)

## Masters

- A Case Study of the Standard Cost System of the Goodyear Tire and Rubber Company of Alabama, Woodrow G. Burke, *University of Alabama*, 1957
- Dairy Farm Accounting, James R. Christofferson, *University of Pennsylvania*, 1957
- Recent Developments in Commissary Accounting, James M. Clark, *University of Alabama*, 1957
- Import-Export Accounting: An Analysis of the Accounting Problems and Practices of the Import-Export Merchant, Barrett M. Crawford, *University of California (Berkeley)*, 1957
- Recommendations and Guides for Profit-Sharing—Acme Paper Company, William R. Egan, *Emory University*, 1957
- A Study of Current Accounting Systems and Practices of Small Retail Businesses in Selected Capital Cities of the Caribbean Area, Kenneth H. Emmerson, *University of Miami*, 1957
- Cost Accounting for a Departmentalized Commercial Bank, Richard P. Hairsine, *University of Pennsylvania*, 1957
- An Accounting System for Incorporated Motels Operating Branch Motels and Subsidiary Corporations, Talmadge E. Harris, *Pennsylvania State University*, 1957
- Accounting for the Apportionment of Interline Freight Revenues, Bruce A. LaBar, *University of Pennsylvania*, 1957
- Cost Control for the Homebuilding Industry, J. Robert Lane, *Emory University*, 1957
- Accounting for Crude Oil Purchases and Sales, Lewis C. McKinney, *University of Tulsa*, 1955

- Some Administrative and Accounting Aspects of Seismograph Operations for Oil and Gas, Joe Norman, Jr., *University of Texas*, 1957
- Accounting for Revenue From Oil and Gas Production, William R. Reed, *University of Texas*, 1957
- Newspaper Local Display Advertising—A Comparison of Cost and Revenue, Joseph H. Shafeld, *Johns Hopkins University*, 1957
- Branch Bank Accounting Centralization vs. Decentralization, Abram M. Shelly, Jr., *University of Pennsylvania*, 1957
- Accounting for Construction Equipment, David S. Willman, *University of California (Berkeley)*, 1957
- Income Recognition and Cost Accounting for Large Tract-Home Builders, Robert D. Winkench, *University of California (Berkeley)*, 1957

## H. MACHINE METHODS

## Doctors

- Study of Order-Processing Functions; Data Processing in Business, John P. McNerney, *Harvard University*, (In Progress)
- The Commercial Applications of Electronic Data Processing Equipment, Richard F. Peirce, *University of Illinois*, 1957
- A Survey of E.D.P. and Its Potential Impact upon Accounting Procedures, Personnel and Education, Robert T. Tussing, *University of Texas*, 1957
- Approach to Electronic Data Processing for Business, Edward A. Wallace, *University of Chicago*, 1957

## Masters

- A Survey of Electronic Data Processing as Applied to Accounting, Thomas A. Foster, Jr., *University of Kansas*, 1956
- Punched Card Procedures for Wholesale Billing, Robert J. Hindrix, *University of Texas*, 1957
- Basic Industrial Accounting Procedures for Maximum Utilization of Electronics, William A. Howe, Jr., *University of Pennsylvania*, 1957
- An Integrated Accounting Application of Large-Scale Electronic Data Processing Equipment, Barry M. Rowles, *University of Pittsburgh*, 1957

## Faculty Research

- Automatic Data Processing: Principles and Procedures, Robert H. Gregory, *Massachusetts Institute of Technology*, (In Progress)

## I. OTHER

## Doctors

- Effects of Accelerated Depreciation on Business Decisions, Dale S. Harwood, Jr., *University of Washington*, 1957
- The Usefulness of Various Kinds of Fixed Costs Information for Selected Managerial and Other Purposes, Gordon E. Bell, *University of Florida*, (In Progress)

## VI. ACCOUNTING FOR NON-PROFIT ENTERPRISES

## A. GOVERNMENTAL ACCOUNTING

## Doctors

- Financial Efficiency in Air Force Management: An Analysis of the Working Capital Fund Concept, Jack W. Coleman, *Indiana University*, (In Progress)
- Management Control System for County Highway Departments, Emerson C. Erb, Jr., *Indiana University*, (In Progress)
- A Study of the Control of Federal Expenditures, Panas Simasathian, *University of Illinois*, (In Progress)

## Masters

- The Development and Administration of a Municipal Garage, with Emphasis upon Accounting Control, Roy Baker, *University of Kansas*, 1957
- Managerial Accounting in the Federal Government, Leroy Mabe, *University of Pennsylvania*, 1957

## Faculty Research

- Capital Budgeting in Governments, A. Miller Hillhouse, *Cornell University*, (In Progress)

## B. INSTITUTIONAL ACCOUNTING

## Doctors

- Control Problems of Smaller Colleges and Universities Doing Contract Research, C. Russell De Burlo, Jr., *Harvard University*, (In Progress)
- The Organization and Utilization of Accounting Data for Managerial Purposes in General Hospitals, Robert E. Linde, *University of Michigan*, (In Progress)
- Cost Accounting and Budgeting for State Mental Hospitals, Hubert L. Menn, *University of Texas*, 1957

## VII. LEGAL AND GOVERNMENTAL ASPECTS OF ACCOUNTING

## A. TAXATION

## Doctors

- Third Structure Taxes; Applicability for Kentucky, Lewis C. Bell, *University of Kentucky*, (In Progress)
- A Study of the Use Being Made of Liberalized Depreciation Methods under the 1954 Revenue Code, Leo A. Poland, *Indiana University*, (In Progress)
- The Impact of Federal Income Taxes on Residential Real Estate Developers, Donald E. Roark, *Indiana University*, 1957

## Masters

- Federal Income Tax Aspects of the Subdivision of Real Estate, Lorin W. Anderson, *University of Utah*, 1957
- Federal Income Taxation of Farmers' Cooperatives, Joseph E. Bafford, *University of Pennsylvania*, 1957
- Tax Problems of Pension and Profit Sharing Plans, Marvin Bernstein, *City College of New York*, 1957
- Leases, Accounting and Taxation, Herbert Blum, *City College of New York*, 1957
- Selected Alternative Accounting Methods and Techniques for Tax Management in Small Business, William C. Durden, *Louisiana State University*, 1957
- A History of Taxation and Its Varied Methods of Assessment Prior to the Twentieth Century, Harry L. Geiringer, *Long Island University*, 1957
- Sales and Use Tax Auditing of California State Board of Equalization, Arsen I. Gregorian, *University of California (Berkeley)*, 1957
- Tax Considerations in Employee Pension, Profit Sharing, and Other Fringe Benefit Plans, Charles Grisafi, *City College of New York*, 1957
- Stock Redemptions: Tax Problems Under the 1954 Code, Nathaniel Gubar, *University of Pennsylvania*, 1957
- Percentage Depletion and the Petroleum Industry, George M. Harmon, *Emory University*, 1957
- An Effect of the 1954 Internal Revenue Code: The Election of a Partnership To Be Taxed as a Corporation, James D. J. Holmes, *University of Alabama*, 1957
- A Study of Taxable Activities Under the Provisions of The New York State Unincorporated Business Tax Law, Isadore Klein, *City College of New York*, 1957

Indian Estate Duty-U. S. Federal Estate Tax, A Comparative Study, Kalpathi C. Krishnan, *University of Pennsylvania*, 1957

The Income Tax Aspects of Net Operating Loss Carrybacks and Carryovers, Edgar D. Landis, *University of Pennsylvania*, 1957

Charitable Foundations for Tax Planners, Joseph L. Lempel, *City College of New York*, 1957

Tax Considerations Affecting the Closed Corporation: An Examination of the Factors Involved in the Decision to Incorporate the Small Business Enterprise, Davis G. Margolis, *University of Pennsylvania*, 1957

Tax Incentives to Stimulate Business, Michael Milisci, *City College of New York*, 1957

Income Taxation Problems of Estates and Trusts Arising from the Concept of Distributable Net Income in the 1954 Internal Revenue Code, William D. Paton, Jr., *University of Pennsylvania*, 1957

"Qualified" Pension Plans for the Small and Medium-Sized Corporation (A Study of the Tax Advantages and Pitfalls in Their Organization and Operation), Norman M. Piltzin, *City College of New York*, 1957

Federal Income Tax on Disposition of Urban Real Estate, Warren L. Raker, *Pennsylvania State University*, 1957

A Definition of "Dividends" under Income Tax Law, Robert B. Rider, *University of Pennsylvania*, 1957

An Evaluation of the Tax Treatment of Individual Capital Gains in the United States, Raymond M. Sommerfeld, *State University of Iowa*, 1957

Tax Depletion of Oil Properties, George W. Tabor, *Southern Methodist University*, 1957

Inconsistent Treatment by the Courts in Tax Cases, Douglas H. Tanner, *University of Pennsylvania*, 1957

The Deductibility of Non-Business Expenses for Federal Income Tax Purposes, Burton A. Weisner, *City College of New York*, 1957

Tax Accounting for Companies Reporting Income under the Completed Contract Basis, George Zadikoff, *City College of New York*, 1957

#### B. REGULATION

##### Doctors

An Evaluation of the Accounting Provisions Contained in the Ohio General Corporation Law, Joseph E. Hampton, *The Ohio State University*, 1957

Accounting Concepts and Standards Underlying Social Regulation of Business, Hussein Sharaf, *University of Illinois*, (In Progress)

Cash Working Capital Requirements in Regulated Companies, Jack H. Matthews, *Indiana University*, (In Progress)

Rate of Return of Private Electric Utilities, William C. Tuthill, *University of Michigan*, (In Progress)

A Study of the Influence of the S.E.C. on the Development of Accounting, Charlton G. Schoefler, *University of Illinois*, (In Progress)

The Influence of the United States SEC on the Practice of Auditing, William E. Whittington, *University of Illinois*, 1957

##### Masters

An Analysis of the Adequacy of the Uniform System of Accounts with Respect to the Needs of the Commission, the Utilities, and the Accounting Profession, Charles J. Green, Jr., *University of Pennsylvania*, 1957

The Influence of the Securities and Exchange Commission on Disclosure in Financial Statements, Francis M. Brady, Jr., *Lehigh University*, 1957

A Study of the Development of the SEC's Accounting Requirement for the Preparation of Periodic Income Statements from 1933 to 1956 and Reactions of Practicing Accountants, Joel S. Ehrenkranz, *University of Pennsylvania*, 1957

The SEC and Its Relationship to Public Accounting, Joseph S. Hopson, *University of Texas*, 1957

#### C. CONTRACTS AND CONTRACT RENEGOTIATION

##### Masters

Accounting Problems Under the Renegotiations Act of 1951 as Amended in 1954, Werner M. Goldschmidt, *City College of New York*, 1957

Adapting a Commercial Cost Accounting System to Yield Defense Contract Costs, Willey E. Nesbitt, *The Ohio State University*, 1957

#### D. OTHER

##### Masters

Short-term Inter-vivos Trusts, Richard B. Henney, *Hofstra College*, 1957

#### VIII. REORGANIZATION AND LIQUIDATION

##### B. CAPITAL READJUSTMENTS AND REORGANIZATIONS

##### Doctors

Criteria for Judging When New Accounting Entities Are Created in Voluntary Corporate Re-

organizations, William H. Culp, *University of Michigan*, (In Progress)

*Masters*

Accounting Problems Preliminary to Business Combination, Earl O. Hollenbaugh, *University of Pennsylvania*, 1957

IX. EDUCATION

*Doctors*

A Study of the Accounting Graduates of Five Selected Alabama Schools of Higher Education, 1946-1955; Their Occupational History and Their Opinions Relative to Their Training, Percy B. Yeargan, *University of Alabama*, 1957

*Masters*

A Comparative Study of Requirements for Higher Degrees in Accounting in the United States for the Academic Year 1952-1953, Reverend Donald Hebel, S.M., *Catholic University of America*, 1957

Planning Educational Program for Ethiopian Students of Accounting, Dimberu H. Merriam, *University of Pennsylvania*, 1957

A Survey of Bookkeeping and Accounting Offerings in the Major Seminaries of the United States, Reverend Leonard Moran, S.M., *Catholic University of America*, 1957

The Accounting Systems Course in Collegiate Schools of Business, Peter N. Reed, *University of Pennsylvania*, 1957

X. MISCELLANEOUS

*Doctors*

Factors Affecting the Selection of Countries for American Industrial Plant Locations in Central Europe, William R. Hoskins, *Indiana University*, (In Progress)

Investment Opportunities in the Early 1800's, R. Bruce McCosh, *Indiana University*, (In Progress)

*Masters*

Business Data Processing Using Matrix Techniques, Michael J. Erdei, *Massachusetts Institute of Technology*, 1957

A Critical Analysis of the Application of Mathematical Theory to the Solution of Accounting Problems, Edwin M. Gault, *University of Pennsylvania*, 1957

*Faculty Research*

Measurements and Managerial Decisions, Paul Kircher, *University of California (Los Angeles)*, 1957

A Glossary of Statistical Terms for Accountants, L. L. Vance, *University of California (Berkeley)*, (In Progress)



# THE TEACHERS' CLINIC

A. B. CARSON

EDITOR'S NOTE: This section of THE ACCOUNTING REVIEW is devoted to matters of particular interest to accounting instructors. The contribution of articles bearing on the nature and purpose of various types of accounting education, or dealing with techniques of accounting instruction, is invited. Address all correspondence to A. B. Carson, School of Business Administration, University of California, Los Angeles 24, California.

## CO-OPERATIVE EDUCATION FOR BUSINESS

CHARLES H. GRIFFIN

*University of Illinois*

Educators and business leaders generally concur in the belief that there is a gap, sometimes of disturbing proportions, between education for business and practical business experience. Both deplore the lengthy period of orientation required of the new graduate in adjusting to his business environment. It has proven a costly experience for the employer and, oftentimes, a frustrating one for the employee. The atmosphere of the business community, immediate and urgent, is in striking contrast to the climate of quietude more normal to college campuses. More important, however, to the graduate is the difficulty often encountered in assimilating the many facts, theories, and concepts of the classroom in such manner as to make effective application of them to practical business problems. The intricate organization of many businesses does not promote an orderly or rapid transition, and the increasing size and complexity of operations further magnifies the problem. Nor are the dimensions of many college curricula of such magnitude as to fortify adequately the graduate for immediate assumption of responsibility in his new employment. Opinion remains divided as to wherein responsibility rests for the graduate's orderly transition to a productive employment status, whether with industry or education, but there is agreement that the problem—unsolved—continues to be a costly adventure.

The problem of shortening the graduate's period of adjustment in his first business experience embraces all facets of the business education curricula. Accountancy, as one of these, is perhaps more fortunate than some others, in that its instructional methods emphasize the *application* of theory in the solution of problems and practice cases; however, even this type of training does not immunize the graduate from the pains of postgraduate relocation and adjustment.

### *Beginning of Co-operative Education*

What may have been the earliest experiment to blend theory and practice in one educational package had its birth in the imagination of Herman Schneider, a young civil engineering instructor at Lehigh University in the early 1900s. Dissatisfied with the prevailing instructional methods, which he believed promoted the breach between principle and its application, he pondered the question of how to best combine these elements so that the influence of each might reinforce the other. As a consequence of his musing and study, there emerged the embryo of co-operative education, so called because its success required the co-operation of both industry and education. Schneider proposed that students be trained concurrently in theory and practice by beginning employment while still in college. His plan called for dividing students into two groups, one group

working while the second attended class. After a period of time at their respective assignments, members of these groups would exchange positions, each assuming the task formerly performed by his alternate. Such a proposal assured a measure of continuity in the co-operative work, an important consideration to the co-operating business. It was Schneider's conviction that a plan of alternating on-the-job training with classroom instruction made possible gains not to be attained from academic work alone. Much of an individual's post-graduate success, he opined, could be attributed to the work experience afforded by such a plan. As early as 1902, he suggested a definite program of combined theoretical and practical training for engineers which he believed would provide the following advantages for the student:

1. A foundation in the basic principles of science.
2. Ability to use these principles in practice.
3. An understanding of engineering in general, as well as one special department.
4. A working knowledge of business forms and processes.
5. A knowledge of men as well as matter.
6. Drill and experience in the following essentials:
  - (a) Doing one's best naturally and as a matter of course.
  - (b) Prompt and intelligent obedience to instructions.
  - (c) Ability to command intelligently and with toleration.
  - (d) Accuracy and system.
  - (e) Ability to write clearly and concisely, and to present technical matter interestingly before an audience.
7. Ability to meet social requirements easily.
8. An appreciation of humanity's best achievements.<sup>1</sup>

Attracted by the industrial milieu of Cincinnati, Schneider in 1903 joined the engineering faculty at the University of

Cincinnati. Here he became a prolific writer and an affluent speaker concerning co-operative education, proposing anew the adoption of the co-operative plan for the College of Engineering. His faculty colleagues, steeped in the traditions of classical education, were not easily persuaded; nor was there unanimity in the business community that the plan was completely workable. However, despite these and other barriers, Schneider persevered and gained approval for his program. It was adopted for the College of Engineering in 1906.

The first class was composed of twenty-seven students, the second class, seventy students, and within six years (1912), two hundred ninety-four students and fifty-five firms were jointly engaged in this educational experiment. Growth continued thereafter at an accelerated pace. In 1919 the program was extended to commerce, and it has continued to prosper in this new application, until presently the program in commerce, measured in terms of student enrollment, rivals that in engineering.

#### *The Cincinnati Plan in Business Administration*

Many changes have taken place in the development of the co-operative plan in business administration since its beginning in 1919. As the success of the venture has become known, other universities have adopted the plan for their commerce curricula, the only observable differences being details of organization and administration. The following description of the Cincinnati plan does not purport to be a model for other institutions where conditions and circumstances are not comparable. Rather does it represent the current status of the program at the university of its birth, after nearly forty years of growth.

The present co-operative curriculum for students in business administration at the

<sup>1</sup> Clyde W. Park, *Ambassador To Industry, The Idea and Life of Herman Schneider* (Indianapolis: The Bobbs-Merrill Company, 1943), pp. 52-53.

University of Cincinnati calls for a five-year program of work. During the first year, all students attend class for thirty-five weeks. This period is divided into seven-week terms. At the end of each term, the student is examined and graded on the work then completed. Normally, three such terms are necessary to complete a single course, although in certain instances, special courses may be completed in fourteen weeks, or two terms. The term grades are but tentative measurements of a student's accomplishments, and the final course grade is awarded at the end of twenty-one weeks, or three terms.

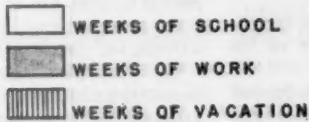
At the twenty-eight week juncture of the freshman year, students are divided into two groups, Section I and Section II. Students in one section proceed to their work assignments, while those in the other section remain on campus for additional classroom instruction. At regular intervals thereafter, the students alternate in their campus and work assignments, one group attending class with the other participating in on-the-job work experience. Reference to the accompanying diagram will perhaps aid in understanding the operating details of the system of alternating study and work. It may be observed that the third year of the program is referred to as the pre-junior year. The second, third, and fourth years contain twenty-one weeks of academic instruction, twenty-six weeks of co-operative work, and five weeks of vacation. During the fifth year, the work assignments are reduced in the manner illustrated to permit the senior class to graduate as a unit.

The present seven-week term has evolved after much experimentation with other lengths of time. Some universities using the co-operative plan have chosen shorter periods; others have elected longer ones. The fragmentation of the academic year into short terms creates numerous problems in pedagogy, the solutions to

which become more difficult the shorter the length of term. Arguments are frequently advanced supporting the adoption of a quarter plan, and there are obvious advantages accruing from this type of scheduling.

In large measure the success of this plan is dependent upon the extent to which work assignments are selected which will complement a student's classroom instruction to the end of a better balanced education. However, the problem of determining the correct employment for an individual student and supervision of his work thereafter is a complex matter. This is the responsibility of a group of co-ordinators, operating within the framework of a Department of Co-ordination and Placement. Their goal is to place the student in appropriate employment, to offer counsel and supervision in connection therewith, and to provide effective liaison between the university and the employer for optimum mutual benefit from the co-operative arrangement. Normally, in the first two years of a student's program, an effort is made to select that employment which will provide a non-specialized general business experience; thereafter, assignments are made permitting the student to relate more directly his on-the-job training with his major field of academic interest. In these later years, experience is offered in sales, purchasing, finance, and accounting. Accounting students frequently profit from experience in both public and industrial accounting. To the extent possible, students are advanced from the more routine jobs to those requiring greater skill and initiative as the student demonstrates an aptitude for and proficiency in his work. Compensation is provided the student employee at the prevailing rate for other employees of similar skill engaged in the same type of work. On completion of each work section, the student is required to prepare a report on his work experience.

# THE CO-OPERATIVE PLAN



## FRESHMEN

SECTION I	7 PERIOD 1	7 PERIOD 2	2	7 PERIOD 3	7 PERIOD 4	2	7 PERIOD 5	10
	7 PERIOD 1	7 PERIOD 2	2	7 PERIOD 3	7 PERIOD 4	1	8	7 PERIOD 6
SECTION II	7 PERIOD 1	7 PERIOD 2	2	7 PERIOD 3	7 PERIOD 4	1	8	7 PERIOD 6
	7 PERIOD 1	7 PERIOD 2	2	7 PERIOD 3	7 PERIOD 4	1	8	7 PERIOD 6

## SOPHOMORES - PRE-JUNIORS - JUNIORS

SEC I	3	7	8	1	7	8	7	10
	PERIOD 1				PERIOD 3		PERIOD 5	
SEC II	10	7	8	1	7	8	7	3
		PERIOD 2			PERIOD 4		PERIOD 6	

## SENIORS

SEC I	3	7	8	7	8	7
	PERIOD 1			PERIOD 3		PERIOD 5
SEC II	10	7	8	7	2	7
		PERIOD 2		PERIOD 4		PERIOD 5

Reproduced with permission of the University of Cincinnati from its *College of Business Administration Bulletin*, 1957-1958, p. 11.

This report, in conjunction with a report of the co-operative employer evaluating the student's work performance, forms the basis of a grade awarded for the work section.

### Benefits from Co-operative Education

After a half century of experience in co-

operative education, it would seem appropriate to appraise the results of the program in the light of its contributions to students, employers, and the university. Henry H. Armsby, U. S. Department of Health, Education and Welfare, has summarized the results of such an evaluation by Schneider and his colleagues and enu-

merates the following alleged advantages:

#### *Advantages to the Student*

The student's industrial experiences help him to participate intelligently in the shaping of his education in many ways, such as:

(a) The practical test of his inclinations and adaptability help him to decide on a suitable type of work.

(b) He is stimulated to make original investigations and to learn the practical applications of the theories he is studying in college.

(c) His first-hand contacts with other employees and with problems of labor management increase his understanding of the human factors in industry.

(d) Industrial discipline helps him to form good work habits and to acquire a feeling of self-reliance and a sense of responsibility.

(e) He has an opportunity for partial or perhaps total self-support, and can command a better salary upon graduation than can the "regular" student.

#### *Advantages to the Co-operating Firm*

The co-operating firm benefits in several ways, among which are the following:

(a) Carefully selected employees are trained in company organization and procedures while securing a technical education, without the expense to the firm of maintaining a training school.

(b) Experience shows that many of these employees remain with the employing firm after graduation, and that they are qualified to fill important key positions.

(c) The exchange of ideas among students, co-ordinators, and supervisors leads naturally to the university becoming interested in the problems of industry, and ultimately to its becoming a center for basic research in these problems.

#### *Advantages to the College*

In addition to the larger service which the co-operative school renders to its students and the employing industries, there are advantages within the school itself, among which the following are outstanding:

(a) The double test of academic fitness and industrial suitability speeds up the process of elimination of unqualified students.

(b) The industrial contacts of the students permit the elimination of much descriptive technical matter from courses, allowing correspondingly greater emphasis to be placed on fundamental principles.

(c) The availability of industrial equipment enables the university to reduce its expenditures

for school shops and illustrative models.

(d) The alternating periods of shop and college permit a fuller use of the university plant, since many more students can be accommodated when only part of them are in college at one time.

(e) Through its intimate relationship with industry the university finds not only a humanizing influence, but also a perpetual stimulus to research in the basic principles of science.<sup>3</sup>

On considering these advantages, some critics will counter that many of them are in reality *objectives* of co-operative education, not yet proven by experience over a sufficiently long period of time. Still others may argue that not all of these advantages may be described as the products of the co-operative concept, but often accrue from more traditional methods of instruction.

#### *Summary*

Since its beginning in 1906, the co-operative plan has experienced unusual growth. In 1956 there were thirty-eight colleges and universities participating in co-operative education, training approximately twenty thousand students. In some of these institutions, the program has replaced older established systems, while in others it now operates in parallel with them. The co-operative concept has been the prototype for many experiments to broaden the practical base for business education. Indeed, the internship programs in business, now in the curricula of many universities, have been called the progeny of the co-operative education idea. The plan, as originally proposed, applied to engineering, and it has experienced its most rapid growth in this field. However, after demonstrated success in this area, it has been extended to non-engineering areas, including business administration, applied arts, architecture, and numerous others. To date, twelve universities have

<sup>3</sup> Henry H. Armsby, *Cooperative Education in the United States*, Bulletin 1954, No. 11, U. S. Department of Health, Education, and Welfare (Washington: U. S. Government Printing Office, 1954), pp. 15-16.



colleges or schools of business administration which have adopted some form of co-operative system.

Those institutions which have accepted this philosophy of business education are confident generally as to its high place in the hierarchy of educational systems. However, many will candidly admit it would not be a profitable or effective venture for all universities. If the plan is to be completely workable, the educational institution should be located at or near an urban or industrial area, or in such other locale as would provide abundant co-operative employment opportunities. Where these conditions obtain, the plan offers hope for spanning the breach between theory and practical experience with minimum adjustment for both graduate and employer. The plan has received much support and praise from scientists, educators, and business leaders. Charles F. Kettering, one of its chief protagonists,

with whom Schneider worked in the plan's original formulation and development, predicts a bright future for co-operative education. He once remarked, "It seems to me that co-operative education is such a logical thing, once we view it from a distance, that we can hardly imagine its being a difficult movement to start. But as true then as now, the most difficult thing in the world is to do something new. Looking back on things, we can see them in clear relief, and we wonder why there was ever any question about them. But as we look forward toward the other end of these problems, they appear vague and so indefinite that most people say, 'Let's not go ahead.' The past is the great clarifier, and only those who can take an aim from the past can possibly see definitely into the future. To see into the future requires a great determination."<sup>3</sup>

<sup>3</sup> Park, *op. cit.*, p. 12.

## A BROAD-GAUGE COURSE IN GOVERNMENTAL ACCOUNTING\*

WILLIAM L. CAMPFIELD

*United States Army Audit Agency*

A large number of collegiate offerings in governmental financial administration and related accounting concentrate heavily on fiscal management for municipal and state governments. In past years this concentration was perhaps warranted inasmuch as the financial activities of the Federal Government were relatively small by comparison. During the past two decades, however, federal spending has increased from an annual proximate four billion dollars to an approximate seventy billion dollars per annum. Manifestly, Federal

Government of today is big business indeed.

The rapid growth in the scope, complexity, and the influence on the nation's economy of activities by the Federal Government has caused educators and others interested in public administration to devote increasing attention and emphasis to the planned study of means of achieving effective and economical management of these activities. Accordingly, many colleges and universities have introduced in recent years new courses dealing with governmental accounting, governmental fiscal policies, governmental budgeting, and so on. For the most part, these courses have represented useful additions

\* The views expressed herein are those of the author and do not necessarily reflect policy of the United States Army Audit Agency with which the author is associated.

to college curricula but in too many instances are merely fragmented bits of the whole picture of management requirements.

This article sets forth a suggested course, of graduate level content, that would emphasize the unifying and inter-related financial management and control aspects of public administration with special reference to policies and practices of the Federal Government.

#### *Course Objectives*

The overriding objective of the course is the development in the student of careful judgment regarding significant financial matters of central government both at policy making and operating levels.

Although the goals and policies underlying public administration, and purposes for which public funds are to be expended may be the most desirable that informed minds can conceive, the existence of inefficient financial management may preclude the achievement of results that are economically desirable. Moreover, with central governmental activities expanding in a way to constitute Federal Government as the world's biggest business, it is abundantly clear that study of public administration must be directed in a way to concentrate more critical review and analysis on ways of deriving modern and effective financial management. Accordingly, the approach in the course is such as to study program and performance budgeting; cost and financial analysis, control, measurement, and reporting; general accounting and reporting; internal auditing; and, other facets of financial management as important and interlocking parts of the whole complex of a well ordered and managed government.

In consequence of the current-day influence of government fiscal management on the lives and affairs of all citizenry, each informed citizen must apply his share of

understanding and initiative toward creating and maintaining an efficiently managed public administration. The content of the proposed course should therefore appeal not only to students specializing in business administration areas but to students whose interests are in related areas such as Law, Political Science, and Public Administration.

#### *Scope and Methodology of the Course*

The course is arranged to embrace twenty-four (24) topical areas including provision for a final examination if one is deemed necessary by the instructor. The topics could be presented as the basis for a scholastic quarter's work of two class meetings for each of twelve weeks, or they could be expanded with a minimum of effort to cover a semester's offering of two class meetings for each of eighteen weeks.

It is contemplated that the course would be conducted in a way to utilize a combination of lecture-discussion; case problem analysis-discussion; field trip observation and reports; and, individual student report and discussion leadership techniques. Students should be expected to work in an environ of individual initiative and freedom to develop constructive ideas and tactics. Hence, each student should be required to work on an individual project culminating in a written report to be submitted at or near the closing meeting of the course.

Special case problems and studies and assigned diversified reading would constitute the course. Suggested basic materials and references, as outlined below, should be supplemented topic by topic with current, relevant periodicals and other media. Suggested basic reference material follows. Obviously, this list should be altered to fit the specific needs or preferences of a given college or university.

#### *1. Text or Other Books*

- a. Millet, John, *Management in the Public*

Service, McGraw-Hill Book Company, New York, 1954

- b. Waldo, Dwight, Editor, *Ideas and Issues in Public Administration*, McGraw-Hill Book Company, New York, 1953.
- c. Selko, Daniel T., *The Federal Financial System*, The Brookings Institution, Washington, D. C., 1940.
- d. Lindholm, Richard W., *Public Finance and Fiscal Policy* (Chapters 1, 5, 35, 36), Pitman Publishing Company, New York, 1950.
- e. McNeil, Neil, and Metz, Harold W., *The Hoover Report, 1953-1955*, The Macmillan Company, New York, 1956.
- f. Smithies, Arthur, *The Budgetary Process in the United States*, McGraw-Hill Book Company, New York, 1955.
- g. Kohler, Eric L. and Wright, Howard W., *Accounting in the Federal Government*, Prentice-Hall, Inc., New York, 1956.
- h. Smith, Harold D., *Management of Your Government*, McGraw-Hill Book Company, New York, 1945.
- i. White, Leonard D., *Introduction to the Study of Public Administration*, The Macmillan Company, New York, 1950.
- j. Morstein Marx, Fritz, Editor, *Elements of Public Administration*, Prentice-Hall, Inc., New York, 1946.

## 2. Periodicals

- a. *Public Administration Review*—quarterly publication of the American Society for Public Administration, 1313 East 60th Street, Chicago 37, Illinois.
- b. *Municipal Finance*—quarterly publication—Municipal Finance Officers Association—Joseph F. Clark, Edt. 1313 East 60th Street, Chicago 37, Illinois. (Includes articles pertaining to financial management in Federal Government.)
- c. *The Federal Accountant*—quarterly publication, Federal Government Accountants Association, 1523 L Street, N.W., Washington 5, D. C.

## 3. Case Studies—Integrated cases on Planning, Programming and Controlling Operations of Selected Agencies, Departments or other entities of Federal Government.

## 4. Pamphlets and Other Documents

- a. Bureau of the Budget, *The Budget of the United States Government for the Fiscal Years Ending: June 30, 1957, June 30, 1958*; U. S. Government Printing Office, Washington, D. C.

## Course Topics and Sequence of Presentation

The course is organized in a "generalist" approach to a study of the major problems involved in effective organization, control, and evaluation of public affairs. Accordingly, topics are arranged to permit the student to systematically analyze the sequential and interrelated aspects of public management and in turn to derive a partial synthesis of criteria for evaluating the efficiency of such management.

Topics for discussion in the proposed course are arranged under six major headings: (1) Goals and Organizational Framework; (2) Planning and Programming; (3) Performance Budgeting; (4) Measurement, Evaluation, and Communication Tools; (5) Field Observation of Public Management; and (6) An Overview of the Effectiveness of Public Management.

The specific topics proposed for the course are outlined below:

### Part I.—The Nature, Goals, and Organisational Framework of Public Management

#### Topic 1.—Toward a theory of "Professionized" Management for Public Service

- a. The universality of management
- b. Key aspects of the art of management
- c. Comparisons and interrelations—public and private management

#### Topic 2.—The Overall Goals and Methods of Public Management

- a. Concepts regarding responsibility of Government to the people
- b. Interrelations of public authority and power with private authority and power in promoting general welfare
- c. Fiscal goals and policies as integral and influencing parts of overall public policy considerations
- d. Stability of the American System of public management.

#### Topic 3.—Organization for Public Management—Structural and Resources

- a. Objectives and general aspects of organization—guides for organizational decisions
- b. The tripartite system of checks and balances

- c. Administrative organization of the Executive Branch—structural aspects.
- d. Organization of resources.

*Part II.—Planning and Programming Underlying Financial Management in Government*

*Topic 4.—Nature of the Planning Process*

- a. Policy and goals formulation
- b. Inventorying resources for accomplishing goals
- c. Preparation of work programs to achieve specific objectives

*Topic 5.—Public Policy and its Translation into Finance—Influenced Planning*

- a. Legalistic prescriptions and administrative pronouncements shaping public policy
- b. Legislative—executive actions in development of goals and programs
- c. Contra influences of planned fiscal activity and private economic activities

*Topic 6.—Nature of Federal Financial Functions*

- a. Origin of the Federal Financial System
- b. Major components of the System

*Part III.—Essentials of Performance Budgeting and Control—The Heart of Effective Financial Management*

*Topic 7.—Evolution of the Budget Idea*

- a. Early history—changes in budget system prior to 1921
- b. Reorganization and improvements subsequent to 1921
- c. Theory and principles of modern budget management

*Topic 8.—The Budget as an Instrument for Reflecting and Shaping National Policy*

- a. The variegated and complex nature of budgetary decisions
- b. The embodiment of major public policy
  - (1) Emphasis on choices among objectives of public service
  - (2) Expression of government fiscal policy and prospective influence on national economy

*Topic 9.—Organizing for Effective Budgetary and Financial Management*

- a. The emerging role of the Bureau of the Budget as key activator and control of financial management and policy functions
- b. Coordinating agencies and services
- c. The stages of the budgetary process

- d. Organization arrangements—vertical and horizontal—for facilitating the budgetary process

*Topic 10.—Budget Formulation and Development of Budget Policy*

- a. Formulation of programs—The defense budget
- b. Formulation of programs—Non-defense

*Topic 11.—Preparation, Approval, and Adoption of the Budget*

- a. Revenue and expenditure estimating
- b. Legislative action on proposed budget
- c. Congressional action toward advance control over budget execution.

*Topic 12.—Performance Budgeting in Operation (Budget Execution)*

- a. Legislative and executive control of budget after enactment
- b. Problems in observance of legislative intent
  - (1) Legal effect of appropriations
  - (2) The apportionment and allotment system
- c. Control over Receipt, Custody, and Expenditure of Funds
  - (1) Roles of operating Agencies and Treasury Department
  - (2) Coordinating role of Bureau of the Budget

*Topic 13.—Content of Budgetary Review by Legislative and Executive Branches*

- a. Continuing or progress review and adjustment
- b. Post review

*Part IV.—Measurement, Evaluation and Communication Tools for Management Control—The Role of Accounting, Auditing, and Other Control Mechanisms*

*Topic 14.—The Rationale and Shape of Management and Internal Controls*

- a. Universality of management control mechanisms
  - (1) Need for planned controls arises from complex and expanding nature of "business" or economic operations
  - (2) Represents a corollary to decentralization of authority and responsibility.
- b. Effective internal control implies formulation of sound operating policies and advance assurance of adequate application of policies. Major ingredients are:
  - (1) Orderly division and prescription of

functional responsibilities and authority

- (2) Built-in internal checks, balances, measurements
- (3) Continuous review and check of actual performance
- (4) Timely corrective actions and/or improvements
- c. Accounting and auditing, internal and external, play parts—by no means the only parts nor the most important parts
- d. The overall role and responsibility of the Controller (Comptroller) in facilitating management control

*Topic 15.—The Financial Accounting Phase of Management Control*

- a. Correlated and interrelated accounting and management activities
  - (1) The measurement-analysis and communication phases of the accounting function
  - (2) The accounting cycle matched with the management cycle
- b. General considerations regarding the use of accounting information
  - (1) Planning
  - (2) Control
- c. The general nature of fiscal accounting in government
  - (1) Legal influences
  - (2) Relations to budgetary control
  - (3) *Funds and Appropriations* Control, limitations, and accounting
  - (4) Comparisons with accounting for private enterprise

*Topic 16.—Application of Performance Standards, Cost Accounting, and Budgeting in the Control Process*

- a. Standards, cost and budget data for use in managerial planning and control
  - (1) Responsibility centers and the assignment of related costs
  - (2) Cost analysis and control through standards
- b. The varied nature of cost accounting, cost budgeting, and cost control in government
  - (1) Historical and stewardship uses
  - (2) Application to cost budgeting and estimating
  - (3) The governmental activity; activity accounting and control
  - (4) Comparisons between cost accounting and control, and appropriation accounting and control

*Topic 17.—Constructive Auditing and Reporting for Management Purposes*

- a. The general nature of Internal Auditing and relationship to other management controls
- b. The concurrent two-phased approach
  - (1) Independent ascertainment of compliance with management policies, practices
  - (2) Objective evaluation of the efficiency of resources utilization
- c. The emerging role of internal auditing in government
  - (1) Scope of responsibilities in executive agencies and departments
  - (2) Legislative branch responsibilities—the activities of the General Accounting Office
- d. Effective reporting and communicating to management

*Topic 18.—Highlights of the Current Movement to Improve the Control Tools of Public Management*

- a. Hoover Task Forces and the Joint Effort to Improve Managerial Responsibility, Accountability, and Control
  - (1) The major goals of the movement
  - (2) Recent enabling major legislation and statutes
- b. Progress in applying Cost and Performance Budgeting
- c. Adoption of working capital and other commercial type arrangements for cost and revenue control
  - (1) Noteworthy examples of control achieved
- d. Selected examples of use of "professionized" auditing as means of extending management control

*Part V.—Field Observation of Selected Public Management*

*Topics 19 and 20*

A minimum of two field trips is suggested. Visitation sites should be selected on the basis of representativeness of the governmental establishment with respect to all important operating functions of government.

Advance arrangements should be made by the class instructor with responsible officials of the selected government establishment to address the class and to make provision for a tour of facilities and selective observation of operations.

It is suggested that each member of the class be required to prepare a brief written report for



each field trip. Each report should include constructive comments and appraisal regarding the operations observed.

*Part VI.—Synthesis of Responsibility and Efficiency of Public Financial Management*

*Topic 21.—General Criteria of Efficiency of Management*

- a. Some broad gauge tests of management efficiency
  - (1) Continuous, objective control of planned goals and operations
  - (2) Maintenance of resources and operations in equilibrium
  - (3) Creation of favorable position for future operations
  - (4) Timeliness in decision-making and decision activation
- b. Gauging management responsibility
  - (1) Distinctions in private and public management
  - (2) Economic, social, political influences
- c. The efficiency criterion in perspective
  - (1) Levels of measurement
  - (2) Flexibility of yardsticks

*Topic 22.—Re-examination of Resources and Devices for Continuing Measurement and Appraisal of Results*

- a. Synchronized Organization Structure and Goals, Personnel, and Plant
  - (1) Interacting and interdependent influences of policies, organization structure, resources, and operations in management decision process
  - (2) Resources (human and material) allocation geared to planned output
- b. A deliberate pattern for leadership
  - (1) Effective methods of motivating and directing people
  - (2) Carefully designed means and media of communication
  - (3) Voluntary and responsive coordination
  - (4) Timely and constructive supervision, integration, and control
- c. Measurement, Review and Analysis, and Reporting Controls reappraised
  - (1) Distinctive aspects of controls over management responsibility in public enterprise

*Topic 23.—The Major Elements and Techniques of Management Improvement*

- a. Areas for priority consideration

- (1) Planning and organization
- (2) Personnel policy and procedure
- (3) Budgetary, accounting, and reporting practices
- (4) Internal services
- (5) Supervisory practices
- b. The key techniques and procedures of management improvement
  - (1) The Administrative or Management Survey
  - (2) Work simplification
  - (3) Establishment of work standards
  - (4) Work measurement and analysis

*Topic 24.—Final Examination*

A comprehensive project report may be substituted for a final examination.

*Summary*

The size, diversity, and complexity of financial activities of present day Federal Government and the need for efficient management and reporting of these activities is of vital concern for every citizen. A purposeful, productive campaign has been underway for some ten years to modernize the entire concept of management in government. This movement has been spearheaded by officials within government and has received impetus and support from citizens' groups, notable among which are the various Hoover Commission Task Forces.

Each individual, each institution, and each collective group of individuals has a responsibility to contribute to the effort of achieving effective management of taxpayers' money.

Colleges and universities can be particularly helpful and can contribute substantially to this effort by expanding their curricula to include more comprehensive instruction with respect to the application of modern management principles and practices, especially as these relate to activities of the Federal Government.

The writer has presented in this paper the framework of a suggested graduate course which would emphasize the man-

agement controls necessary to carry out effectively objectives of the legislative and executive branches of the Federal Government. The suggested course might well

supplement or complement other Business Administration, Political Science, or Public Administration offerings customarily given by colleges and universities.

## CHANGED NAMES OF PROFESSIONAL ORGANIZATIONS AND REFERENCE THERETO IN THESES AND DISSERTATIONS

ROBERT H. VAN VOORHIS

*Louisiana State University*

The American Institute of Accountants changed its name, effective June 1, 1957, to The American Institute of Certified Public Accountants. The National Association of Cost Accountants on July 1, 1957 became the National Association of Accountants. Those who read theses and dissertations have the problem of advising the writers as to an appropriate means of dealing with these name changes in referring to the organizations and their publications. The following solution is suggested:

In referring to either of these organizations, use the current name. After the first such reference, mention in the body of the text by parenthetical note the former name and date of change. For example, "In 1952 the National Association of Accountants (at that time named National Association of Cost Accountants—the name was changed July 1, 1957) published. . . ." Thereafter in the thesis or dissertation, regardless of the period of time being considered, the current name of the organization would be used.

In referring to publications issued after the change of name, use the current name in both the reference in the text and in footnotes, if any. This poses no problem. In referring to publications issued before the change of name, some consistent method should be followed. If the organization has not been mentioned previously, use the current name and follow it with the parenthetical note suggested in the

preceding paragraph. If the organization has been mentioned previously, and a parenthetical note included after the first reference, the current name should be used in the text in connection with the publication, even if issued under the former name. In the accompanying footnote, however, the organization name should be stated as it was when the publication was issued. The first time such a footnote is used, a parenthetical note should be added to it, in this manner: (On June 1, 1957 the name of this organization was changed to The American Institute of Certified Public Accountants.) In subsequent footnotes, no such parenthetical notation would be used.

In support of these suggestions, it seems desirable to adopt some simple and uniform method of dealing with the problem. It seems preferable to refer to a given organization consistently by the same name, and logical that this name should be its current one. Yet material published under the former name will continue to be filed and listed in library catalogs under the original name, and footnote and bibliographical reference to it under that name is essential. While most readers might experience little difficulty in making the transition from one name to another, the suggested parenthetical notations, made only once in the body of the text and once in the footnotes for a given organization, appears to be a simple way of avoiding any misunderstanding.

## PROFESSIONAL EXAMINATIONS

### ACCOUNTING PRACTICE

HENRY T. CHAMBERLAIN AND JOHN H. CHAMBERLAIN

**T**HE following problems were prepared by the Board of Examiners of the American Institute of Certified Public Accountants and were presented as the second half of the C.P.A. examination in accounting practice May 15, 1958.

The candidates were required to solve problems 1, 2, and 3 and either problem 4 or problem 5. The total weight assigned to this section of the examination was 50 points and the examiners point out that the suggested time allowances given below are approximately proportional to the point value of the various problems.

The suggested time allowances are as follows:

Problem 1	30 to 50 minutes
Problem 2	60 to 80 minutes
Problem 3	30 to 50 minutes
Problem 4 or	
Problem 5	60 to 90 minutes

The time allowed for this section of the examination was four and a half hours.

#### *Number 1*

From the following information set forth below you are to prepare a Federal income tax return for Mr. Bernard Dooley for the calendar year 1957. Your solution should show in schedule form all items going into the computation of the net taxable income, the computation of the tax and the final balance payable or overpayment of tax. Set up in good form any supporting computations needed in preparation of the return.

Bernard Dooley, age 43, maintains a home in which he supports his daughter, age 4. Ann, age 40, the wife of Dooley, died on October 27 of the current year. On November 1 Dooley employed a woman who spent one-half her time as housekeeper and one-half as baby-sitter at a salary of \$50 per month plus board and room. The cost of the board and room is estimated to be \$100 a month.

Dooley earned \$7,500, before withholdings, from Zinc Smelter, Inc. Income taxes of \$980 and FICA taxes of \$94.50 were withheld from his wages. In connection with his work he incurred \$450 in business transportation expenses which were not reimbursed. During the year he paid \$300 on account of his declaration of estimated tax for 1957.

On December 1, 1957 he sold 100 shares of Essel Stock for net proceeds of \$20,930. The stock was acquired on January 15, 1957 for \$16,000.

Dooley and his wife jointly owned \$2,500 cost and face value of U. S. Treasury Bonds issued December 27, 1940 on which interest of \$50 was collected during the year. Interest of \$60 was received on T-T & Z bonds, a corporation chartered in the U. S., and \$245 interest on savings bank deposits was credited to his account.

On common stock of CBC, a domestic corporation, cash dividends of \$200 were re-

**NOTE.** A helpful seventy-six page booklet entitled *Information for CPA Candidates* is available for 30 cents from the American Institute of Certified Public Accountants, 270 Madison Avenue, New York 16, New York.

ceived after July 31, 1957 by Dooley; his wife received a dividend of \$300 from the same corporation.

On October 1, 1957 he received a gift of C. U. stock, a U. S. industrial corporation, with a fair market value of \$12,000, from his uncle. This stock had been purchased by his uncle on February 2, 1948 for \$10,000. On November 18 all this stock was sold for net proceeds of \$10,960.

On August 20, 1957 information was received about the death of a friend who owed \$2,400 to Dooley. The friend had no estate from which the loan can be paid.

On November 20, 1957 the face value of \$4,000 on a life insurance policy on his wife's life was received. The total premiums which had been paid amounted to \$2,200.

During the year \$1,200 from rental of a house owned by Dooley was received. Depreciation and out-of-pocket current expenses including real estate taxes amounted to \$1,400 on the house.

During the taxable year he spent \$1,200 for entertainment in connection with his employer's business. On December 30, 1957 he received a check for \$2,000 from his employer to cover such entertainment expenses.

Personal expenses paid during the year included:

Property tax on residence.....	\$ 330
Federal excise taxes.....	30
State sales and use taxes.....	80
Contributions to the C-P Church.....	2,000
Contributions to Community Chest.....	100
Contribution to the Republican Political Party Central Committee.....	200
Prescribed drugs and medicines purchased.....	160
Doctor bills paid, total.....	820
Settlement from health and hospitalization policy.....	400
Dental bills paid.....	50
Health and hospitalization insurance premiums.....	150
Payment to CPA for the preparation of tax return.....	60

In October his personal automobile was involved in an accident in which the loss in fair market value amounted to \$900, however his recovery from his automobile insurance was \$850. The insurance premium on the automobile was \$120.

#### Tax Rate Tables

	Single Persons		Heads of Households	
		20%		20%
\$ 0 to \$ 2,000.....			\$ 400 plus 21%	
2,000 to 4,000.....	\$ 400 plus 22%		820 plus 24%	
4,000 to 6,000.....	840 plus 26%		1,300 plus 26%	
6,000 to 8,000.....	1,360 plus 30%		1,820 plus 30%	
8,000 to 10,000.....	1,960 plus 34%		2,420 plus 32%	
10,000 to 12,000.....	2,640 plus 38%		3,060 plus 36%	
12,000 to 14,000.....	3,400 plus 43%			
<b>Married Taxpayers</b>				
<b>Filing Joint Returns</b>				
\$ 0 to \$ 4,000.....		20%		
4,000 to 8,000.....	\$ 800 plus 22%			
8,000 to 12,000.....	1,680 plus 26%			
12,000 to 16,000.....	2,720 plus 30%			

#### Number 2

You have been asked by a client to review the records of the Ranmill Manufacturing Company, a small manufacturer of precision tools and machines. Your client is interested in buying the business and arrangements have been made for you to review the accounting records.

Your examination reveals the following:

1. The Ranmill Manufacturing Company commenced business on April 1, 1955 and has been reporting on a fiscal year ending March 31. The company has never been audited, but the annual statements prepared by the bookkeeper reflect the following income before closing and before deducting income taxes:

<i>Year Ended March 31</i>	<i>Net Income Before Taxes</i>
1956.....	\$37,800
1957.....	56,200
1958.....	53,790

2. A relatively small number of machines has been shipped on consignment. These transactions have been recorded as an ordinary sale and billed as such. On March 31 of each year, machines billed and in the hands of consignees amounted to:

1956.....	\$6,110
1957.....	none
1958.....	5,343

Sales price was determined by adding 30% to cost.

3. On March 30, 1957, two machines were shipped to a customer on a c.o.d. basis. The sale was not entered until April 5, 1957, when cash was received in the amount of \$5,800. The machines were not included in the inventory at March 31, 1957.

4. All machines are sold subject to a five-year warranty. It is estimated that the expense ultimately to be incurred in connection with the warranty will amount to  $\frac{1}{2}$  of one per cent of sales. The company has charged an expense account for warranty costs incurred.

Sales per books and warranty costs were:

<i>Year Ended March 31</i>	<i>Sales</i>	<i>Warranty Expense for Sales Made in</i>			<i>Total</i>
		<i>1956</i>	<i>1957</i>	<i>1958</i>	
1956.....	\$ 844,710	\$680			\$ 680
1957.....	905,000	320	\$1,170		1,490
1958.....	1,604,110	290	1,450	\$1,710	3,450

5. A review of the corporate minutes reveals the manager is entitled to a bonus of  $\frac{1}{2}$  of one per cent of the net income before deducting income taxes and his bonus. The bonuses have never been recorded or paid.

6. Bad debts have been recorded on a direct write-off basis. Experience of similar enterprises indicates that losses will approximate  $\frac{1}{4}$  of one per cent of sales. Bad debts written off were:

	<i>Bad Debts Incurred on Sales Made in</i>			<i>Total</i>
	<i>1956</i>	<i>1957</i>	<i>1958</i>	
1956.....	\$670			\$ 670
1957.....	720	\$ 480		1,200
1958.....	200	1,700	\$1,500	3,400

7. The bank deducts 6% on all contracts financed. Of this amount  $\frac{1}{2}$ % is placed in a reserve to the credit of the Ranmill Manufacturing Company which is refunded to Ranmill as finance contracts are paid in full. The reserve established by the bank has not been reflected in the books of Ranmill. The excess of credits over debits (net increase) to the reserve account with Ranmill on the books of the bank for each fiscal year were as follows:



1956.....	\$ 2,800
1957.....	3,750
1958.....	4,960
	<u>\$11,510</u>

8. Commissions on sales have been entered when paid. Commissions payable on March 31 of each year were:

1956.....	\$ 1,200
1957.....	700
1958.....	960

9. On May 17, 1957, the building was sold to an insurance company for \$890,000. Its book value at the date of sale was \$880,000.

a. Present a schedule showing the revised net income before income taxes for each of the years ended March 31, 1956, 1957, and 1958. Make computations to the nearest whole dollar.

b. Prepare the journal entry or entries you would present the bookkeeper to correct the books. Assume the books have not yet been closed for the fiscal year ended March 31, 1958. Disregard correction of income taxes.

c. Compute the purchase price. Your client will pay the amount of the corrected book value of the net assets at March 31, 1958 plus goodwill equal to two times the average profits before taxes in excess of a 6% return on the final capital. According to the books the net assets were \$548,250 at March 31, 1958. Extraneous gains and losses are not to be considered in the calculation of average annual profits.

### Number 3

Blank and Company is a family partnership engaged in the wholesale trade. It closes its books at December 31. During the year, all transactions are recorded on a cash receipts and disbursements basis. However, at the end of the fiscal year, adjustment is made to what was termed the "inventory account" for all items necessary to reflect operations and financial position on an accrual basis.

Partner E died on October 31, 1957. His will left equal shares in his estate to partners A and C and an outsider, F. For purposes of this problem, assume no probate period, and that E's estate was distributed immediately. All remaining partners, together with F, agreed that the business of Blank and Company would continue as a partnership of A, B, C, D and F, with beginning interest on November 1, 1957 as computed on a proper accrual basis to October 31, and after distribution of E's interest on that date.

Depreciation of fixed assets may be ignored.

Balances as shown by the books of the firm were as follows:

	January 1, 1957	October 31, 1957
Cash.....	\$ 42,000	\$ 55,000
Inventory Account.....	195,000	195,000
Fixed Assets.....	60,000	59,000
Accruals.....	29,000	16,000
Notes Payable.....	100,000	60,000
Partners' Equity.....	168,000	168,000
Sales.....	—	2,000,000
Purchases.....	—	1,725,000
Operating Expenses.....	—	210,000

In addition to the above, the following information concerning the inventory account was available.

At January 1, 1957: Accounts Receivable, \$80,000; Merchandise, \$200,000; Freight Claims (on incoming merchandise), \$2,000; Prepaid Operating Expenses, \$10,000; Accounts Payable, \$90,000; Allowances Due Customers, \$7,000. At October 31, 1957: Accounts Receivable, \$83,300; Merchandise, \$221,000; Freight Claims (on incoming merchandise), \$1,500; Prepaid Operating Expenses, \$6,000; Accounts Payable, \$85,000; Allowances Due Customers, \$8,000.

Partners' equities and profit-and-loss sharing ratio:

	Equities	Profit and Loss Ratio
A.....	\$ 10,500	6.25%
B.....	52,500	31.25%
C.....	77,000	37.50%
D.....	7,000	12.50%
E.....	21,000	12.50%
	<u>\$168,000</u>	<u>100.00%</u>

You are to prepare in good form:

- An income statement for the period January 1 to October 31.
- A statement of financial position at October 31.
- A statement of partners' equities on November 1.

#### Number 4

You have been requested to audit the accounts of Boulevard Homes, Inc., as at December 31, 1957, and prepare financial statements from the following trial balance:

	Debit	Credit
Cash.....	\$ 43,500	
Properties		
Costs:		
Land.....	\$ 40,000	
Improvements—Clearing.....	30,000	
Improvements—Grading and streets.....	280,000	
Construction contract.....	680,000	
Miscellaneous costs (taxes, insurance, etc., all applicable to house construction).....	30,000	
	<u>1,060,000</u>	
Sales.....		\$ 453,500
Notes payable to bank.....		400,000
Notes payable to stockholders.....		200,000
Capital stock.....		50,000
	<u>\$1,103,500</u>	<u>\$1,103,500</u>

During your examination the following information is obtained:

The company constructed 40 houses during 1957. Clearing, grading and street work was performed by the company. Construction of the houses was completed by October 31. During November and December, 25 houses were sold as follows:

1@ \$15,000.....	\$ 15,000
13@ 17,500.....	227,500
5@ 19,000.....	95,000
6@ 20,000.....	120,000
	<u>\$457,500</u>
Less title insurance and recording fees.....	4,000
	<u>\$453,500</u>

It is planned to sell the remaining 15 houses at the following selling prices:

3@ \$15,000 .....	\$ 45,000
7@ 17,500 .....	122,500
5@ 19,000 .....	95,000
	<u>\$262,500</u>

Additional costs to sell (including title insurance and recording fees) are estimated at 5% of selling prices.

Charges amounting to \$5,000 included in Improvements—grading and streets, and charges of \$1,500 included in Miscellaneous costs represent interest on bank loans, salesmen's salaries and expenses applicable to the two months after completion of construction.

Additional costs, unpaid and not recorded at December 31, were:

Balance due on construction contract .....	\$12,000
Liability insurance for period ending October 31 .....	3,500
Salesmen's salaries and expenses for December .....	1,500
	<u>\$17,000</u>

It was learned that the wood flumes installed as street sewers must be replaced with steel pipe at an estimated cost of \$19,000.

Land purchased was plotted into 200 lots, of which 70 were subsequently improved by the company (with grading and streets). Approximately one-half of the land was cleared, and houses were erected on 40 of the 70 lots. The costs associated with the land and the construction of houses were considered to be proportional to the sales prices on the houses.

Required:

- Adjusting journal entries supported by schedules prepared in good form.
- A balance sheet.
- A profit and loss statement.

#### Number 5

The Smith Company uses a standard cost system. The standards are based on a budget for operations at the rate of production anticipated for the current period. The Company records in its general ledger: variations in material prices and usage, wage rates and labor efficiency. The accounts for manufacturing expenses reflect variations in activity from the projected rate of operations, variations of actual expenses from amounts budgeted, and variations in the efficiency of production.

Current standards are as follows:

<b>Materials:</b>		
Material A .....		\$1.20 per unit
Material B .....		2.60 per unit
Direct labor .....		\$2.05 per hour
 <b>Finished products (content of each unit):</b>		
Material A .....	12 units	12 units
Material B .....	6 units	8 units
Direct labor .....	14 hours	20 hours

The general ledger does not include a finished goods inventory account; costs are transferred directly from work in process to cost of sales at the time finished products are sold.

The budget and operating data for the month of August, 1957 are summarized as follows:

<b>Budget:</b>			
Projected direct labor hours	(hours)	9,000	
Fixed manufacturing expense		\$ 4,500	
Variable manufacturing expenses		13,500	
Selling expenses		4,000	
Administrative expenses		7,500	
<b>Operating data:</b>			
<b>Sales:</b>			
500 special widgets		\$52,700	
100 de luxe widgets		16,400	
<b>Purchases:</b>			
Material A	8,500 units	\$ 9,725	
Material B	1,800 units	5,635	
<b>Material requisitions:</b>			
	<i>Material A</i>	<i>Material B</i>	
<b>Issued from stores:</b>			
Standard quantity	8,400 units	3,200 units	
Over standard	400 units	150 units	
Returned to stores	75 units		
<b>Direct labor hours:</b>			
Standard		9,600 hours	
Actual		10,000 hours	
<b>Wages paid:</b>			
500 hours at	\$2.10		
8,000 hours at	2.00		
1,500 hours at	1.90		
<b>Expenses:</b>			
Manufacturing	\$20,125		
Selling	3,250		
Administrative	6,460		

**Required:**

- Prepare journal entries to record operations for the month of August, 1957. Show computations of the amounts used in each journal entry. Raw material purchases are recorded at standard.
- Prepare a statement of profit and loss for the month supported by an analysis of variations.

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A helpful seventy-six page booklet entitled **INFORMATION FOR CPA CANDIDATES** is available for 30 cents from the American Institute of Certified Public Accountants, 270 Madison Avenue, New York 16, New York.

## Solution to Problem 1

**MR. BERNARD DOOLEY**  
**COMPUTATION OF TAXABLE INCOME AND FEDERAL TAX**  
**FOR THE YEAR ENDED DECEMBER 31, 1957**

**GROSS INCOME:**

Salary received from Zinc Smelter, Inc.	\$ 7,500
Expense reimbursement from employer	2,000
Interest on T-T & Z bonds	60
Interest on savings bank deposits	245
Dividends on CBC stock (net of \$100 exclusion)	400
Rental income	1,200
Net long-term capital gain:	
Long-term gain on sale of Essel stock	\$4,930
Long-term gain on sale of C.U. stock	960
	\$5,890
Short-term loss resulting from non-business bad debt	2,400
Excess of long-term gain over short-term loss	\$3,490
50% of excess	1,745
Total	\$13,150
Less:	
Rental income expense	\$1,400
Business expense—travel and entertainment	1,650
Total	3,050

**ADJUSTED GROSS INCOME** **\$10,100**

**Deductions from adjusted gross income:**

Personal exemptions (3@ \$600)	\$1,800
Cost of child care (50% of \$300)	150
Property taxes	330
State sales and use taxes	80
Contributions to the C-P Church	2,000
Contributions to the Community Chest	100
Medical expenses:	
Drugs and medicines	\$ 160
1% of adjusted gross income	101
Excess over 1% of adjusted gross income	\$ 59
Doctor bills	820
Dental bills	50
Medical insurance premium	150
	\$1,079
Proceeds from medical insurance	400
	\$ 679
3% of adjusted gross income	303

Excess over 3% of adjusted gross income	376
Payment to CPA for preparation of tax return	60
Casualty loss	50

**TAXABLE INCOME** **\$ 5,154**

**TAX LIABILITY:**

On taxable income (\$800 + 22% of \$1,154)	\$ 1,054
Dividend credit (4% of \$400)	16
Total Tax Liability	\$ 1,038
Previously paid (\$980 + \$300)	1,280
Amount of overpayment	\$ 242



## Solution to Problem 2

(a)

**RANMILL MANUFACTURING COMPANY**  
**REVISION OF NET INCOME**  
**FOR THE THREE YEARS ENDED MARCH 31, 1958**

	1956	1957	1958
Net income per books before taxes.....	\$37,800	\$56,200	\$53,790
Deduct:			
Profit recorded on goods shipped on consignment in the hands of the consignees at year-end.....	\$ 1,410		\$ 1,233
Profit on a 1957 sale reflected in 1958 income.....			5,800
Provision for warranty expense net of expense charged in the year paid (corrected sales: '56: \$838,600; '57: \$916,910; '58: \$1,592,967).....	3,513	3,095	4,515
Provision for bad debts net of expense charged in the year paid.....	1,426	1,092	582
Salesmen's commissions not reflected in the year earned.....	1,200	700	960
Total.....	\$ 7,549	\$ 4,887	\$13,090
Remainder.....	\$30,251	\$51,313	\$40,700
Add:			
Profit on sale of consigned goods previously reflected in 1956.....		1,410	
Proceeds of sale of machines previously reflected in 1958 (cost of goods sold already having been charged to income).....		5,800	
Finance reserve not refunded charged to expense.....	2,800	3,750	4,960
Salesmen's commissions of prior year reflected in current year.....		1,200	700
Net income before tax and manager's bonus.....	\$33,051	\$63,473	\$46,360
Deduct: Manager's bonus.....	165	317	232
Revised net income before taxes.....	\$32,886	\$63,156	\$46,128

(b)

## Adjusting Journal Entries

(1) Inventory.....	\$ 4,110	
Sales.....	5,343	
Cost of goods sold.....		\$ 4,110
Accounts receivable.....		5,343
To reverse the entries reflecting the shipment of consigned goods as a sale.....		
(2) Warranty expense.....	4,515	
Earned surplus.....	6,608	11,123
Provision for warranty expense.....		
To provide for current and prior years' warranty expense.....		
(3) Bad debt expense.....	582	
Earned surplus.....	2,518	3,100
Provision for bad debts.....		
To provide for current and prior years' bad debt expense.....		
(4) Commission expense.....	260	
Earned surplus.....	700	960
Accrued commissions.....		
To record commissions earned at March 31, 1958 and to charge surplus for commissions earned in 1957 reflected in 1958 expense.....		
(5) Sales.....	5,800	
Earned surplus.....		5,800
To eliminate from 1958 sales the proceeds of a sale in 1957 (cost of sale already charged to 1957 income).....		
(6) Finance reserve retained by bank.....	11,510	
Finance expense.....		4,960
Earned surplus.....		6,550
To record the finance reserve held by bank previously charged to expense.....		
(7) Manager's bonus.....	232	
Earned surplus.....	482	714
Accrued bonus.....		
To record manager's bonus of current and prior years.....		

(c)

## COMPUTATION OF PURCHASE PRICE:

Net Assets:	
Per books at 3-31-58 before adjustment .....	\$548,250
Add:	
Increase in inventory .....	4,110
Increase in finance reserve .....	11,510
Total .....	\$563,870
Less:	
Decrease in accounts receivable .....	\$ 5,343
Increase in provision for warranty expense .....	11,150
Increase in provision for bad debts .....	3,071
Increase in accrued commissions .....	960
Increase in accrued bonus .....	714
Total .....	21,238
Adjusted net assets .....	\$542,632
Goodwill:	
Net income without extraneous items:	
1956 .....	\$ 32,886
1957 .....	63,156
1958 (\$46,128—\$10,000) .....	36,128
Total .....	\$132,170
Average profit .....	\$44,057
6% of adjusted net assets .....	32,558
Excess of average profit over 6% of net assets .....	\$11,499
2 times the excess of average profit over 6% of net assets .....	22,998
PURCHASE PRICE .....	\$565,630

## Solution to Problem 3

**BLANK AND COMPANY**  
**TRIAL BALANCE WORKING PAPER**  
**OCTOBER 31, 1957**

	Trial Balance at 10-31 Per Books		Adjustments		Adjusted Trial Balance at 10-31	
	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.
Cash.....	\$ 55,000				\$ 55,000	
Accounts receivable ..	80,000		(1) \$ 3,300		83,300	
Merchandise.....	200,000		(2) 21,000		221,000	
Freight claims.....	2,000			(3) \$ 500	1,500	
Prepaid operating expenses.....	10,000			(4) 4,000	6,000	
Fixed assets.....	59,000				59,000	
Accounts payable.....		90,000	(5) 5,000			\$ 85,000
Allowances due customers.....		7,000		(6) 1,000		8,000
Accruals.....		16,000				16,000
Notes payable.....		60,000				60,000
Partners' equity.....		168,000				168,000
Sales.....		2,000,000	(6) 1,000	(1) 3,300		2,002,300
Purchases.....	1,725,000		(3) 500	(2) 21,000	1,699,500	
Operating expenses..	210,000		(4) 4,000	(5) 5,000	214,000	
	<u>\$2,341,000</u>	<u>\$2,341,000</u>	<u>\$34,800</u>	<u>\$34,800</u>	<u>\$2,339,300</u>	<u>\$2,339,300</u>

*Explanation of Adjustments:*

- (1) To adjust accounts receivable to the October 31 balance and to adjust sales to an accrual basis.
- (2) To adjust merchandise to its October 31 balance and to adjust purchases to an accrual basis.
- (3) To adjust freight claims to its October 31 balance and to reflect the decrease from January 1 as an increase in purchases previously recorded on a cash basis.
- (4) To adjust prepaid operating expenses to its October 31 balance and to reflect the decrease from January 1 as an increase in operating expenses which previously had been recorded on a cash basis.
- (5) To adjust accounts payable to its October 31 balance and to reflect the decrease from January 1 as a decrease in purchases which previously were recorded on a cash basis.

**BLANK AND COMPANY**  
**STATEMENT OF INCOME**  
**FOR THE TEN MONTHS ENDED OCTOBER 31, 1957**

Sales.....	\$2,002,300
Less cost of goods sold .....	1,699,500
Gross profit from sales .....	\$ 302,800
Less operating expenses.....	214,000
Net income.....	<u>\$ 88,800</u>

**BLANK AND COMPANY**  
**BALANCE SHEET**  
**OCTOBER 31, 1957**

**Assets:****Current Assets:**

Cash.....	\$ 55,000
Accounts receivable.....	83,300
Inventory.....	221,000
Freight claims.....	1,500
Prepaid operating expenses.....	6,000

Total Current Assets.....	\$366,800
Fixed Assets—net.....	59,000
Total Assets.....	<u>\$425,800</u>

## Liabilities and Partners' Equity:

## Liabilities:

Accounts payable.....	\$ 85,000
Allowances due customers.....	8,000
Accruals.....	16,000
Notes payable.....	60,000

Total Liabilities..... \$169,000

## Partners' equity:

A (\$10,500+1/16 of \$88,800).....	\$ 16,050
B (\$52,500+5/16 of \$88,800).....	80,250
C (\$77,000+6/16 of \$88,800).....	110,300
D (\$ 7,000+2/16 of \$88,800).....	18,100
E (\$21,000+2/16 of \$88,800).....	32,100

Total Partners' Equity..... 256,800

Total Liabilities and Partners' Equity..... \$425,800

**BLANK AND COMPANY**  
**STATEMENT OF PARTNERS' EQUITY**  
**NOVEMBER 1, 1957**

## Partner:

A (\$ 16,050+1/3 of \$32,100).....	\$ 26,750
B.....	80,250
C (\$110,300+1/3 of \$32,100).....	121,000
D.....	18,100
F (1/3 of \$32,100).....	10,700

Total..... \$256,800

## Solution to Problem 4

(a)

BOULEVARD HOMES, INC.  
JOURNAL ENTRIES  
DECEMBER 31, 1957

- (1) Selling and administrative expense..... \$ 10,500  
 Improvements—grading and streets..... \$ 5,000  
 Miscellaneous costs..... 1,500  
 Sales..... 4,000  
 To adjust for costs not properly classified
- (2) Construction contracts..... 15,500  
 Selling and administrative expense..... 1,500  
 Accounts payable..... 17,000  
 To adjust for costs not recorded
- (3) Improvements—grading and streets..... 19,000  
 Reserve for construction of sewers..... 19,000  
 To charge to grading and street improvements the  
 estimated cost of replacing wood flumes
- (4) Unimproved lots..... 20,000  
 Improved lots—cleared..... 15,000  
 Improved lots—streets, sewers, and grading..... 329,000  
 Land..... 40,000  
 Improvements—clearing..... 30,000  
 Improvements—grading and streets..... 294,000  
 To reclassify land as to its degree of improvement:

	Total Cost	Cost per Lot	Unimproved Lots (100)	Improved Lots	
				Cleared (30)	Streets, Sewers, and Grading (70)
Land.....	\$ 40,000	\$ 200	\$20,000	\$ 6,000	\$ 14,000
Clearing.....	30,000	300		9,000	21,000
Streets, sewers, and grading.....	294,000	4,200			294,000
Totals.....		\$4,700	\$20,000	\$15,000	\$329,000

- (5) Cost of houses sold..... \$579,713  
 Cost of unsold houses..... 332,287  
 Improved lots—streets, sewers, and grading..... \$188,000  
 Construction contract..... 695,500  
 Miscellaneous costs..... 28,500  
 To allocate the costs of land and construction between sold and  
 unsold houses in the ratio of their sales prices:

Sales Price Per Home	No. of Houses		Sales Prices	Per Cent of Sales Price to Total	Allocated Cost*	Cost of Houses Sold	Cost of Unsold Houses
	Sold	Unsold					
\$15,000	1	3	\$ 60,000	8.3%	\$ 75,696	\$ 18,924	\$ 56,772
17,500	13	7	350,000	48.6	443,232	288,101	155,131
19,000	5	5	190,000	26.4	240,768	120,384	120,384
20,000	6		120,000	16.7	152,304	152,304	
	25	15	\$720,000	100.0%	\$912,000	\$579,713	\$332,287

- (6) Provision for estimated loss on unsold houses..... \$82,912  
 Reserve for estimated loss on unsold houses..... \$82,912  
 To reduce unsold houses to realizable value:  
 Cost of unsold houses..... \$332,287  
 Additional costs to sell (5% of \$262,500)..... 13,125  
 Total..... \$345,412  
 Estimated sales prices..... 262,500  
 Amount of adjustment..... \$ 82,912

\* (Ratio of sales price to total of sales prices applied to total adjusted construction costs amounting to \$912,000.)



(b)

**BOULEVARD HOMES, INC.**  
**BALANCE SHEET**  
**DECEMBER 31, 1957**

<b>Assets:</b>		
Cash.....		\$ 43,500
<b>Properties:</b>		
Unsold houses.....	\$332,287	
Less: Reserve for estimated loss.....	82,912	\$249,375
Improved lots—streets, sewers, and grading.....		141,000
Improved lots—clearing.....		15,000
Unimproved lots.....		20,000
Total properties.....		425,375
Total assets.....		<u>\$468,875</u>
<b>Liabilities and capital:</b>		
<b>Liabilities:</b>		
Notes payable to bank.....	\$200,000	
Accounts payable.....	17,000	
Reserve for construction of sewers.....	19,000	
Notes payable to stockholders.....	400,000	
Total liabilities.....		\$636,000
<b>Capital:</b>		
Capital stock.....	\$ 50,000	
Net loss for the year ended December 31, 1957.....	(217,125)	
Net deficit.....		(167,125)
Total liabilities and capital.....		<u>\$468,875</u>

(c)

**BOULEVARD HOMES, INC.**  
**INCOME STATEMENT**  
**FOR THE YEAR ENDED DECEMBER 31, 1957**

Sales.....	\$457,500
Less cost of houses sold.....	579,713
Gross loss on houses sold.....	\$(122,213)
<b>Add:</b>	
Selling and administrative expenses.....	12,000
Provision for estimated loss on unsold houses.....	82,912
Net loss for the year.....	<u>\$(217,125)</u>

## Solution to Problem 5

(a)

**THE SMITH COMPANY**  
**JOURNAL ENTRIES**  
**AUGUST, 1957**

(1) Material inventory.....	\$14,880	
Material price variation.....	480	
Accounts payable.....		\$15,360
To record material purchases at standard as follows:		
Standard cost:		
8,500 units of A@\$.120/unit.....	\$10,200	
1,800 units of B@2.60/unit.....	4,680	
Total standard cost.....	\$14,880	
Actual cost.....	15,360	
Variation over standard.....	\$ 480	
(2) Work in Process.....	18,400	
Material efficiency variance.....	780	
Material inventory.....		19,180
To record material issues as follows:		
Standard cost:		
8,400 units of A@\$.120/unit.....	\$10,080	
3,200 units of B@2.60/unit.....	8,320	
Total.....	\$18,400	
Efficiency variance:		
325 units of A@\$.120/unit.....	\$ 390	
150 units of B@2.60/unit.....	390	
Total.....	\$ 780	
Total material requisitions.....	\$19,180	
(3) Work in Process.....	19,680	
Direct labor efficiency variance.....	820	
Direct labor price variance.....		600
Accounts payable.....		19,900
To record direct labor at standard as follows:		
Direct labor at standard—		
9,600 hours @\$.2.05/hr.....	\$19,680	
Efficiency variance—excess of actual hours worked over standard		
hours at standard rate—400@\$.2.05/hr.....	820	
Total.....	\$20,500	
Price variance—excess of standard rate over actual rate at actual		
hours—10,000 @\$.06/hr. (Actual rate: actual cost or		
\$19,900 ÷ 10,000 hrs. = \$.199/hr.).....		
	600	
Actual cost.....	\$19,900	
(4) Work in Process.....	\$19,200	
Manufacturing expense budget variance.....	625	
Manufacturing expense efficiency variance.....	800	
Manufacturing expense activity variance.....		\$ 500
Accounts payable.....		20,125
To record manufacturing expenses as follows:		
Manufacturing expenses at standard—9,600 hrs. @\$.2.00/hr. (\$13,500		
+ \$4,500 ÷ 9,000 hrs. = \$.2.00/hr.).....		
	\$19,200	
Efficiency variance—excess of actual hrs. over standard hrs. @ standard		
rate—400 hrs. @\$.2.00/hr.....		
	800	
Budget variances—excess of actual variable costs over variable costs at the		
budgeted rate applied to actual hours—\$15,625—(10,000 hrs.@\$.1.50/hr.)..		
	625	
Total.....	\$20,625	
Activity variance—excess of actual hrs. worked over hrs. budgeted at the		
standard rate of fixed manufacturing expenses—1,000 hrs.@\$.50/hr.....		
	500	
Actual cost.....	\$20,125	

(5) Selling expenses.....	3,250	
Administrative expenses.....	6,460	
Accounts payable.....		9,710
To record various expenses for the month of August		
(6) Accounts receivable.....	69,100	
Cost of sales.....	54,970	
Sales.....		69,100
Work in process.....		54,970
To record sales and cost of sales for the month of August:		

	Special Widgets	De Luxe Widgets
Material.....	\$15,000	\$ 3,520
Labor.....	14,350	4,100
Overhead.....	14,000	4,000
Total.....	\$43,350	\$11,620
Total Deluxe.....	11,620	
Total cost.....	\$54,970	

(b)

**THE SMITH COMPANY**  
**STATEMENT OF INCOME**  
**FOR THE MONTH OF AUGUST, 1957**

Sales.....		\$69,100
Less cost of sales:		
Cost of sales at standard costs.....	\$54,970	
Variations from standard cost—net.....	2,405	
Total cost of sales.....		57,375
Gross profit from sales.....		\$11,725
Less:		
Selling expense.....	\$ 3,250	
Administrative expense.....	6,460	
Total.....		9,710
Net profit for the month of August.....		\$ 2,015

**Analysis of Variations:****Material variations:**

Price variation.....	\$ 480
Efficiency variation.....	780
Total.....	\$ 1,260

**Labor variations:**

Efficiency variance.....	\$ 820
Price variance.....	(600)
Total.....	220

**Manufacturing Expense Variations:**

Budget variance.....	\$ 625
Efficiency variance.....	800
Activity variance.....	(500)
Total.....	925

Total all variations.....	\$ 2,405
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## EXAMINATION IN THEORY OF ACCOUNTS

WILLARD J. GRAHAM

THE examination in theory of accounts of the May, 1958, C.P.A. Examination was given on Friday, May 16, in a three and one-half hour session from 1:30 P.M. to 5:00 P.M. There were two groups of questions included. All four questions in the first group were required; three were to be selected from four in the second group.

NOTE TO CANDIDATES: To save candidates the time of computing their own time budgets for each question, notations of estimated time requirements are furnished for each question to be answered separately, and in the aggregate for all questions to be answered out of a group where options are involved. The estimated time allowances are approximately proportional to their point value, the total of which for this examination is 100 points.

### GROUP I

(Answer all questions in this group.)

*Number 1* (Estimated time—20 to 30 minutes)

Once equipment has been installed and placed in operation, subsequent expenditures relating to this equipment are frequently thought of as being in the nature of a repair or general maintenance, and hence chargeable to operations in the period in which the expenditure is made. Actually, determination of whether such an expenditure should be either charged to operations or capitalized involves a much more careful analysis of the character of the expenditure.

What are the factors that should be con-

NOTE: Answers to Question 4, Question 8 and part of Question 7 have been taken from the "unofficial" answers prepared by the Editor of the Accounting Education Department of the Institute.

sidered in making such a decision? *Discuss fully.*

### Answer 1

The decision between "capitalizing" an expenditure relating to equipment and charging it to operations is governed by a number of factors which may have varying relative importance in different situations. To avoid distortion and non-comparability of reported income, it is essential that a sound policy be established and that it be followed uniformly and consistently from period to period. The factors usually considered in distinguishing between "capital" and "revenue" expenditures are these:

#### (1) *Effect on length of life*

An expenditure which is expected to prolong service-life beyond the *original estimate* should be capitalized (a) by a charge to the asset itself if the expenditure is for an addition, an improvement, or a betterment, or (b) by a charge to the allowance for depreciation if recorded accrued depreciation is "cancelled" by a major overhaul or replacement; if the original cost of the item replaced can be determined, this amount may be written out of the asset account against the allowance for depreciation and the cost of the new part charged to the asset account.

#### (2) *Effect on productivity or usefulness*

If the expenditure increases current productivity beyond *initial* productivity, it should be capitalized.

#### (3) *Frequency and regularity of similar expenditures*

Expenditures which would "qualify" as capital expenditures but which are made frequently and at fairly regular intervals, particularly if the amounts are relatively

small, may be charged to current operations without distorting income. However, if the total of such expenditures is material, and if this total varies substantially from period to period, the failure to capitalize may distort income.

- (4) *Materiality—the size of the expenditure (a) relative to other statement amounts and (b) relative to the cost of accounting for it as a capital item*

Relatively small amounts which are technically capital expenditures may, without distortion of income, be charged to current operations on the grounds that the accounting cost of proper handling far outweighs the value of the slightly greater accuracy.

- (5) *Depreciation policy*

Probably most *debatable* items can be resolved in terms of the relative size of the annual depreciation charge. The distinction between “minor” repairs which are expense items and “major” repairs or replacements which are proper charges against the allowance for depreciation rests primarily on the amount of the annual depreciation charge. A minimum depreciation rate may make almost *no* provision for absorbing in the allowance account *any* repairs or replacements no matter how large, while a very high rate may provide for absorbing almost all such charges. Most actual business situations lie some place between these two extremes.

When the expenditure for a major replacement represents costs that *should* have been charged against the operations of prior periods via depreciation, but the allowance for depreciation is not large enough to absorb it, the charge may be to income “below-the-line” or even to retained earnings.

- (6) *Objective Working rules*

To avoid the continuous exercise of subjective judgment, objective working rules may be developed for a consistent handling of expenditures on equipment.

For example, in public utilities, all plant items are ordinarily defined in terms of “plant units.” A repair or a replacement of less than a plant unit is charged to expense; if it equals or exceeds a plant unit, it is capitalized. In other companies, for specific types of assets, the dollar amount of the expenditure may govern; expenditures up to a stated dollar amount are charged to expense; if in excess of this amount they are capitalized. These are sound objective working rules, achieve a consistent policy, and do not distort income *if, and only if, they are coordinated with the depreciation policy*, as discussed in (5) above.

*Number 2* (Estimated time—20 to 30 minutes)

On January 1, 1958 Corporation Z acquired all of the outstanding stock of Corporation M in order to combine the two businesses. Z issued \$100,000 par value of its stock (which had a market value of \$300,000) to the stockholders of M in exchange for their stock. Immediately upon the exchange of the stock, Corporation M was dissolved and Z took over the net assets. As of January 1, 1958 Corporation M had \$100,000 of stock outstanding; \$100,000 of paid-in-surplus; and \$100,000 of retained earnings.

a. Give *two* ways that these transactions may be recorded on the books of Corporation Z.

b. State the circumstances under which *each* of the two treatments would be appropriate and give the reasoning supporting each treatment.

*Answer 2*

a. The recording of this transaction depends upon its interpretation—whether it represents a “purchase” by Company Z or a “pooling of interests.” If it is interpreted as a “purchase” it should be recorded as follows:



Investment in M.....	\$300,000	
Capital Stock.....		\$100,000
Paid-in Surplus.....		200,000
Net Assets.....	\$300,000	
Investment in M.....		300,000

Under this interpretation the purchase of the stock of M corporation is recorded at its "cost." The amount could have been determined either on the basis of the fair market value of the shares issued or on the basis of the value of the assets acquired. In this instance the fair market value of the shares issued is known to be \$300,000, which happens to equal also the book value of the net assets acquired. Only Corporation Z's surplus accounts are retained for future reporting. The paid-in surplus and retained earnings of Corporation M are not carried forward.

If the transaction is interpreted as a "pooling of interests," the entry should be:

Investment in M.....	\$100,000	
Capital Stock.....		\$100,000
Net Assets.....	\$300,000	
Investment in M.....		100,000
Paid-in Surplus.....		100,000
Retained Earnings.....		100,000

Under this concept the accounts of Corporation M and Corporation Z are literally merged or combined. The assets, liabilities, paid-in surplus, and retained earnings of Corporation M are combined with the corresponding accounts of Corporation Z and the combined accounts will be the basis for financial reporting.

b. The distinction between a "purchase" of an interest and a "pooling of interests" is not always clear and distinct. For accounting purposes the distinction should be based on the following criteria, among others:

(1) *Ownership interests*

Where substantially all of the ownership interests in the predecessor companies become the owners of the combination substantially in proportion to their respective interests in the predecessor companies, a "pooling of interests" is indicated. Where a substantial part of the

ownership interests in an acquired corporation is eliminated, a "purchase" is indicated. (Note: The continuation of one or more of the predecessor companies in a subsidiary status does not in itself prevent the combination from being a "pooling of interests.")

(2) *Voting rights*

If in connection with the transaction relative voting rights, as between the constituent companies, are materially changed for example, by the issuance of securities having limited voting or no voting rights a purchase may be indicated.

(3) *Continuity of the business operations of all of the constituent companies in one business enterprise*

The abandonment or sale of a substantial part of the business of one or more of the predecessor companies may indicate a "purchase" rather than a "pooling of interests."

(4) *Relative size of constituent companies*

Relative size may not be an important criterion when the management personnel of the smaller company (or companies) is given a significant part in the management of the combined operations. But where one company is clearly dominant in size and control—holds, say 90 to 95 per cent voting control in the combined enterprise—a "purchase" is rather clearly indicated.

(5) *Changes in ownership or control NEAR the date of combination*

Substantial changes in ownership of constituent companies occurring shortly before or planned to occur shortly after the combination leads to the presumption that the transaction is a "purchase" rather than a "pooling of interests."

Number 3 (Estimated time—20 to 30 minutes)

The general manager of the Cumberland Manufacturing Company received an income statement from his controller. The statement covered the calendar year 1957.

"Joe," he said to the controller, "this statement indicates that a net income of two million dollars was earned last year. You know the value of the company is not that much more than it was this time last year."

"You're probably right," replied the controller. "You see, there are factors in accounting which sometimes keep reported operating results from reflecting the change in the value of the company."

Prepare a detailed explanation of the accounting conventions to which the controller referred. Include justification, to the extent possible, for the generally used accounting methods.

### Answer 3

Net income is ordinarily determined by matching expired costs (expenses) with realized revenue. This method of determining net income is based on a number of accounting conventions which may fail to reflect many changes in the "value" of the company.

#### (1) *The principle of realization*

Increases in "value" of assets are ordinarily not reflected in net income until they are "realized"—verified by a transaction with an outside party. Thus an increase in "value" which occurs in one period may be reflected in the net income of a subsequent period when it is realized. At any given time there may be many increases in value not yet realized—and therefore not recognized. On the other hand, the *principle of conservatism* requires the recognition of most decreases in value even though not yet realized.

#### (2) *The assumption of a stable monetary unit*

Many changes in dollar prices are not changes in the "value" of the items priced, but rather changes in the value of the monetary unit in which the prices are stated. This change is subject to measurement by use of a general price index. For example, when general prices have increased substantially (that is, when the

value of the dollar has decreased substantially) between the acquisition of an asset and its disposal, and the resulting revenue stated in current dollars is matched with expired costs stated in the "larger" dollars of the period of acquisition, the reported net income is not all a "change in value" but is partially only a restatement of the same value in more but smaller dollars. For the foregoing reason, after a period of rising general prices, cost of goods sold, depreciation, and certain other expired costs would have to be re-expressed in terms of more but smaller current dollars before being matched with revenue expressed in current dollars—if the objective were the measurement of a change in "value."

#### (3) *Earning power*

The "value of a company" actually depends primarily on its future earning power. Many intangible factors which determine earning power do not appear in the accounts in dollar amounts. Examples are managerial ability, access to raw materials and to markets, demand for products, labor supply, prospective government action, and many others. Current or prospective changes in these factors influence the current estimate of future earning power and therefore the current "value of the company."

#### (4) *Changes in retained earnings*

Certain realized changes in value may be recorded directly to retained earnings and therefore not be reflected in the net income figure. Dividends paid, of course, and frequently extraordinary losses writedowns of assets, adjustment of the earnings of prior periods and many other similar items may be so handled.

The justification of these conventions and practices is ordinarily related to the need for objectivity, consistency and comparability. Recorded dollar costs are precise, even though they may be less accurate than estimates of value. An outside transaction is a definite and objective criterion of realization. Recognition of

general price level changes *would* undoubtedly lead to various kinds of treatment and reduce objectivity and comparability. So long as the limitations of financial reporting are recognized and admitted—so long as it is understood that the reported net income is merely the excess of *realized* revenue over expired *dollar* costs, and that the balance sheet is not a statement of value but only a statement of sources of capital and of unexpired dollar costs of the assets in which the capital has been invested—the use of these conventions may be satisfactory for the preparation of the *primary statements*. But it should not be impossible to produce *supplementary statements* which would reflect some of the more important changes in value not yet realized, and which would distinguish between changes in value of money and changes in value of items priced in terms of money—between changes in value and the re-expression of the same value in different-sized dollars.

*Number 4* (Estimated time—20 to 30 minutes)

In a manufacturing company in which transfers of products from one department to another are made, often the charge to the receiving department is made at a figure in excess of cost to the producing department.

- a. Why is this practice followed? *Explain*.
- b. Indicate *two* methods of adjusting interdepartmental profits so that generally accepted reports may be prepared, and *explain* the necessity for the methods you suggest.

*Answer 4*

a. An integrated manufacturing company (one in which transfers of products from one department to another are made) very often produces products that may be sold at the end of any one of a series of suc-

cessive operations. In order to find out whether the cost in any department exceeds the income as measured by the selling price of the product processed in that department, the company may transfer products to successive departments at the independent market price of these products at that stage of processing. This permits management to judge adequately the efficiency of operations in terms of the relationship between cost and value-added, on a departmental basis. It also provides significant information for purposes of planning future operations. Furthermore some companies may buy similar items from outsiders or sell a portion of a department's output. Where additional items are purchased, it may be desirable for the subsequent department to have all of its incoming units priced on the same basis.

b. This practice, if no adjustment is made, will result in unrealized profit in inventories on hand at the end of the period, which is contrary to the general principle that income is not realized until there has been a sale outside the enterprise.

Two methods of eliminating this inter-company profit are as follows:

- (1) Establish an "allowance for inter-departmental profit" at the time of transfer, and adjust this allowance and cost of goods held at the time of taking inventory.
- (2) Set up the "allowance" only at the time of taking inventory, determining the amount of unrealized income applicable to the products still on hand.

## GROUP II

Estimated time—60 to 90 minutes.  
Answer any three questions in this group. If more are answered, only the first three will be considered.

*Number 5*

On September 1, 1957, the ABC Co. entered into an agreement with the X Co.,

whereby the X Co. was to construct a building to be leased to the ABC Co. for a ten-year period. The lease provided for annual payments in advance of \$12,000 per year. The building was to be completed on March 1, 1958, at which time the first annual payment was due and the ten-year period started.

The building was not completed until March 15, 1958 when the ABC Co. moved in. Because of the delay in completion and consequent additional expense and loss of revenue to ABC Co., the X Co. agreed to reduce the *first* annual payment to \$11,200, which amount was paid on April 15, 1958.

On March 31, 1958, the close of its fiscal year, the ABC Co. made the following entry in its books:

Prepaid rent.....	\$12,000	
Rent income.....		\$ 800
Rent payable.....		11,200

- Make any adjustments you consider necessary to reflect properly these facts. State your reasoning and discuss any alternatives which may be acceptable.
- How should these details be presented and disclosed in the financial statements of the ABC Co. at March 31, 1958?

#### Answer 5

a. The entry made on the books of the ABC Co. is not correct. The entry might properly have been any one of the following:

(1) Prepaid Rent.....	\$11,000	
Rent Expense.....	200	
Rent Payable.....		\$11,200

This method counts all of the more than proportional reduction of \$800 as an offset to the rent for the month of March even though some of it, apparently, was to compensate for additional expense and loss of revenue resulting from the delay. Under this method the adjusting entry would be:

Rent Income.....	\$ 800	
Rent Expense.....	200	
Prepaid Rent.....		\$ 1,000

(2) Prepaid Rent.....	\$10,713	
Rent Expense.....	487	
Rent Payable.....		\$11,200

This method counts the \$800 reduction as an offset to the rent for the whole year and spreads the \$11,200 proportionately over the  $11\frac{1}{2}$  months of actual occupancy. Under this method the adjusting entry would be:

Rent Income.....	\$ 800	
Rent Expense.....	487	
Prepaid Rent.....		\$ 1,287
(3) Prepaid Rent.....	\$11,000	
Rent Expense.....	500	
Various expense and income a/c's.....		300
Rent Payable.....		11,200

This method attempts to allocate the \$800 reduction between (a) a proportional (\$500) offset to the rent for the month of March, and (b) a \$300 offset to the additional expense and loss of revenue resulting from the delay. This method is perhaps the most logical but may be impractical to apply. Here the adjusting entry would be:

Rent Income.....	\$800	
Rent Expense.....	500	
Various expense and income a/c's.....		\$ 300
Prepaid Rent.....		1,000

- The *rent payable* should appear on the balance sheet as a current liability.

The *prepaid rent* should appear on the balance sheet as a current asset.

The *rent expense* should appear on the income statement among the other operating expenses.

The credit to *various income and expense a/c's* should be applied to the appropriate accounts and the adjusted amounts of these accounts should appear on the income statement (Method (3) only).

The existence and terms of the long-term lease should be disclosed by footnote, if the amount is material in this situation.

#### Number 6

Given below are the details pertaining to the Power Service Department.



## SCHEDULE OF HORSEPOWER-HOURS

	Producing Departments		Service Departments	
	A	B	X	Y
Needed at capacity production.....	10,000	20,000	12,000	8,000
Used during the month of April....	8,000	13,000	7,000	6,000

During the month of April the expenses of operating the Power Service Department amounted to \$9,300; of this amount \$2,500 were considered to be fixed costs.

a. What dollar amounts of the Power Service Department expense should be allocated to each producing and service department?

b. What are the reasons for allocating the costs of one service department to other service departments as well as to producing departments?

Answer 6

a.

achieves two objectives: (1) more accurate service department costs, and (2) more accurate producing department costs.

(1) *More accurate service department costs*

For some managerial purposes (but not all) the cost of operating a service department should be a full-cost amount, including within-the-department costs and allocated costs, both fixed and variable. (For other purposes another cost amount may be appropriate, perhaps the variable within-the-department cost.) Accurate service department costs are necessary in evaluating the operational efficiency of the department, establishing cost control within the department, and planning future operations.

(2) *More accurate producing department costs*

For certain purposes, including the determination of cost of goods sold and the costing of final inventories, there is re-

## SCHEDULE OF POWER SERVICE DEPARTMENT

Cost Allocation  
For the Month Ending April 30, 1957

	Total	Producing Departments		Service Departments	
		A	B	X	Y
Fixed costs.....	\$2,500	\$ 500	\$1,000	\$ 600	\$ 400
Variable costs.....	6,800	1,600	2,600	1,400	1,200
Total.....	<u>\$9,300</u>	<u>\$2,100</u>	<u>\$3,600</u>	<u>\$2,000</u>	<u>\$1,600</u>

The fixed cost (\$2,500) is independent of the amount of service actually rendered. It is the cost of *being ready* to serve all departments at capacity production. The proper basis of allocation, therefore, is the horsepower hours needed at capacity production.

The variable cost (\$6,800) results directly from and is in proportion to service actually rendered. The proper basis, therefore, is the horsepower hours actually used.

b. The allocation of the costs of each service department to other service departments as well as to producing departments

quired an accurate full-cost figure for each producing department including the allocated costs of the service departments. If all of the cost of each service department is allocated directly to producing departments only, an accurate result would be achieved *only* in the rare (probably purely hypothetical) case in which each service department serves all the producing departments in substantially the same proportion as do all the other service departments. Of course problems are encountered in allocating service department costs to other service departments where two or more departments render service to each



other. These problems may be solved by the use of a series of simultaneous equations. Ordinarily, however, a reasonably accurate solution may be secured by "closing out" first the service department that renders service to the greatest number of other departments and receives the least service and so on through all the service departments, "closing out" last the department that renders service to the smallest number of other departments and receives service from the greatest number.

#### Number 7

The M Co., manager of an office building, is considering putting in certain concessions in the main lobby. An accounting study produces the following estimates, on an average annual basis:

Salaries.....	\$ 7,000	
Licenses and payroll taxes.....	200	
Cost of merchandise sold:		
Beginning inventory.....	\$ 2,000	
Purchases.....	40,000	
Available.....	42,000	
Ending inventory.....	2,000	40,000
Share of heat, light, etc.....	500	
Pro rata building depreciation.....	1,000	
Concession advertising.....	100	
Share of company administrative expense.....	400	
Sales of merchandise.....	49,000	

The investment in equipment, which would last 10 years, would be \$2,000.

As an alternative, a catering company has offered to lease the space for \$750 per year, for ten years, and to put in and operate the same concessions at no cost to the M Co. Heat and light are to be furnished by the office building at no additional charge.

What is your advice to the M Co.? Explain fully.

#### Answer 7

On a comparative return basis, the M Co. should put in and operate the concessions themselves. The pertinent figures are

as follows:

Sales of merchandise.....	\$49,000
Cost of merchandise sold.....	40,000
Salaries.....	7,000
Licenses and payroll taxes.....	200
Concession advertising.....	100
Depreciation of equipment.....	200
Total expense.....	47,500
Net income from concessions.....	\$ 1,500

The pro rata building depreciation, share of heat, light and power, and share of company administrative expense are eliminated from the analysis since they will continue under either alternative.

The estimated net income from operating the concessions exceeds the alternative rental income by \$750. This represents about a 19% annual return on the required investment of \$4,000 (\$2,000 in equipment and \$2,000 in inventory)—actually about a 25% return on the average investment of \$3,000 (\$2,000 in inventory + \$2,000/2. in equipment). This should compensate adequately for the additional risk involved in owning and operating the concessions as contrasted with renting.

#### Number 8

The HIJ Company finances some of its current operations by assigning accounts receivable to a finance company. On July 1, 1957, its assigned, under guarantee, accounts amounting to \$40,000, the finance company advancing to them 80% of the accounts assigned (20% of the total to be withheld until the finance company has made its full recovery), less a commission charge of  $\frac{1}{2}\%$  of the total accounts assigned.

On July 31, the HIJ Company received a statement that the finance company had collected \$21,000 of these accounts, and had made an additional charge of  $\frac{1}{2}\%$  of the total accounts outstanding as of July 31, this charge to be deducted at the time of the first remittance due HIJ Company from the finance company. On August 31,

1957, the HIJ Company received a second statement from the finance company, together with a check for the amount due. The statement indicated that the finance company had collected an additional \$16,000 and had made a further charge of  $\frac{1}{2}\%$  of the balance outstanding of August 31.

a. Make all entries on the books of the HIJ Company that are involved in the above transactions.

b. Explain how these accounts should be presented in the financial statements of HIJ Company at July 31 and at August 31.

*Answer 8*

a. The accounting entries would be as follows:

July 1, 1957			
Cash.....		\$31,800	
Financing expense.....		200	
Equity in accounts assigned.....		8,000	
Accounts receivable.....			\$40,000
To record the assignment of the accounts. (The credit may have been to Accounts receivable assigned—a contra account to Accounts receivable.)			
July 31, 1957			
Financing expense.....		95	
Equity in accounts assigned.....			95
To record the additional financing charge on July 31, together with the reduction in the equity in the assigned accounts resulting therefrom.			
August 31, 1957			
Financing expense.....		15	
Cash.....		4,890	4,905
Equity in accounts assigned.....			
To record the receipt of check on August 31. The cash received was calculated as follows: the finance company was entitled to the \$32,000 collected (equal to the original 80% advanced) plus the finance charges of \$95 for July and \$15 for August, or a total of \$32,110; the HIJ Company is entitled to the total amount collected, \$37,000 less the \$32,110 calculated above, or \$4,890. The assumption is that the finance company will make the final collections and reimburse the HIJ Company.			

b. The statement presentation on July 31 would include among the current assets the item "Equity in \$19,000 of Accounts assigned under guarantee" . . . \$7,905. As a footnote to the balance sheet, there would be a statement to the effect that the company is contingently liable for accounts assigned under guarantee in the

amount of \$11,095. This \$11,095 can be calculated in two ways: (1) \$19,000 of uncollected accounts less the equity of \$7,905, or (2) the original liability for the \$32,000 advanced, less the \$21,000 collected since then, plus the \$95 additional finance charge.

On August 31, 1957, the current assets classification would contain the item Accounts receivable—Finance Company . . . \$3,000. There would be no contingent liability, as the finance company has completely recovered their advance plus their finance charges.

At both dates an appropriate amount of allowance for doubtful accounts should be deducted from the equity in the accounts receivable. The finance charges would ap-

pear as expense items in the income statements, normally in a section following the determination of the net income from operations.

A helpful seventy-six page booklet entitled INFORMATION FOR CPA CANDIDATES is available for 30 cents from the American Institute of Certified Public Accountants, 270 Madison Avenue, New York 16, New York.

## ASSOCIATION NOTES

WENDELL P. TRUMBULL

EDITOR'S NOTE: Members of the Association are urged to submit news items for this section to Wendell P. Trumbull, College of Business Administration, Lehigh University, Bethlehem, Pennsylvania. Deadline dates for the receipt of items to be included in THE REVIEW are October 20 for the January issue, January 20 for the April issue, April 20 for the July issue, and July 20 for the October issue.

### CANADA

#### *Queen's University*

R. G. H. SMAILS has resigned the position of director of the School of Commerce and Business Administration; he will continue as professor. L. G. MACPHERSON has been designated director. J. E. SMYTH spent the summer with a firm of chartered accountants in Montreal.

### HAWAII

#### *University of Hawaii*

LEE GLOVER retired from the university in June. He is now associated with Jackson College, Honolulu.

### CALIFORNIA

#### *Los Angeles State College*

Additions to the faculty in September were the following: ALBERT R. COX, assistant professor, formerly of Baylor University; JOHN F. McLAREN, assistant professor, formerly at Ohio University (Athens).

#### *University of California*

MAURICE MOONITZ, associate dean for the last three years, served as acting dean of the Graduate School of Business Administration during the summer. HECTOR ANTON is on leave for the current year for the purpose of filling a position on the faculty of the University of Minnesota. CARL T. DEVINE of the University of Florida and R. B. MATTESSICH of Mt. Allison University, New Brunswick, are visiting members of the faculty for the academic year 1958-59. LEONARD DOYLE has returned after a tour of duty at the University of Indonesia. CHARLES F. LOUIE has resigned to accept a position on the staff at U.C.L.A.

#### *University of California at Los Angeles*

A. B. CARSON has been promoted to the rank of professor. He is serving during the current academic year as acting chairman of the Department of Business Administration as well as acting associate dean of the School of Business Ad-

ministration. WILBERT E. KARRENBROCK is on a year's leave, spending the year in Japan on the Fulbright program. PAUL KIRCHER and HARRY SIMONS are on sabbatical leave. GEORGE R. HAWKES has rejoined the faculty as acting assistant professor. WENDELL R. BUTTREY recently passed the California bar examination. HAROLD HERTZBERG has accepted a part-time instructorship. WILLARD REISZ is also a part-time instructor for the current academic year.

### COLORADO

#### *University of Denver*

R. BRUCE MCCOSH received the D.B.A. degree from the University of Indiana and has been promoted to professor. ALBERT R. MITCHELL was advanced to assistant professor. WILLIAM HUIZINGH has returned to the full-time staff, after a leave for work on the doctorate.

#### *University of Colorado*

WILTON T. ANDERSON has left the School of Business to become Director of Education for the American Institute of Certified Public Accountants. Added to the staff last year were HOWARD G. JENSEN and CHAUNCEY M. BEAGLE, both at the rank of assistant professor. ROBERT S. WASLEY served as president of the Denver chapter of NAA during the past year.

The Division of Accounting sponsored its fifth annual accounting institute last April.

### ILLINOIS

#### *De Paul University*

THOMAS C. HILLIARD has resumed the position of chairman of the Department of Accountancy after an absence due to illness. ELDRED C. STROBEL served as acting chairman during this period.

For high grades on the November 1957 CPA examination, ARTHUR I. FARBER received an honorable mention in national competition for the Elijah Watt Sells award and the silver medal awarded by the Illinois Society of Certified Public Accountants. The Beta Gamma chapter of Beta Alpha Psi was installed on May 20, 1958. STROBEL

was elected faculty vice-president. The entire full-time faculty of the department and forty-three students were accepted as charter members. The Delta chapter of Beta Gamma Sigma was installed in May, and RICHARD J. BANNON was appointed secretary-treasurer.

#### *University of Chicago*

SIDNEY DAVIDSON, formerly of Johns Hopkins University, has joined the faculty as professor. DAVID GREEN, JR. was promoted to associate professor. ROBERT G. TAYLOR has been given an appointment as instructor.

WILLIAM J. VATTER resigned to accept a professorship of business administration at the University of California. To accept an appointment as professor and associate dean at Michigan State University, KULLERVO LOUHI has resigned from the faculty.

#### *Roosevelt University*

SAMUEL WALDO SPECTHRIE was honored last May with a dinner and generous contributions to a fund established in his name at the university.

### INDIANA

#### *Butler University*

WILLIAM F. SHORS has been granted a sabbatical leave for the second semester of the current academic year. He is serving a three-year term on the board of governors of the Indianapolis chapter of the Institute of Internal Auditors, and is presently a member of the education committee of the Indiana Association of Certified Public Accountants.

### KANSAS

#### *University of Wichita*

LEO A. POLAND has joined the staff as assistant professor, following resignation of a similar position at the University of Kansas. SIDNEY E. BRINKMAN, former lecturer in the department, is now a full-time instructor. LOUIS H. GILLES, JR. resigned to accept an assistant professorship at Emporia State Teachers College.

The fourth annual Petroleum Accounting Conference is scheduled for May 1, 1959, on the University campus. WILLIAM F. CRUM will again serve as chairman of the conference, and LLOYD LIVINGSTON will be general chairman for next year.

### LOUISIANA

#### *Louisiana State University*

W. ROSS HECK has been appointed instructor.

JACK RICHISON recently earned the CPA certificate. CLARENCE DUNN was last year's president of the Baton Rouge chapter of NAA. JAMES OWEN is president for the current year of the Baton Rouge chapter of the Society of Louisiana Certified Public Accountants. ELZY MCCOLLOUGH and JAMES OWEN participated in the program of the Southwestern section meeting of the American Accounting Association, held at Dallas in April.

The tenth annual Southeastern section meeting of the American Accounting Association was held on the campus in March, with LLOYD MORRISON and ROBERT VAN VOORHIS in charge of the program and local arrangements. VAN VOORHIS also took part in the Pan American accounting and management conference at Edinburg, Texas.

This fall the department of accounting will conduct a five-week series of CPA review courses.

#### *Tulane University*

The eighth Tulane Tax institute is scheduled for November 5-8 at the St. Charles Hotel, New Orleans. PETER A. FIRMIN is executive secretary of the institute.

### MARYLAND

#### *University of Maryland*

MARK A. PLIVELIC enjoyed a summer residency in public accounting with Price Waterhouse & Co. ROBERT S. HIMES completed his Ph.D. thesis during the summer.

The University of Maryland will be host to a tax conference, jointly sponsored by the District of Columbia Institute of Certified Public Accountants and the Maryland Association of Certified Public Accountants, to be held December 8. The program is being arranged by the District of Columbia Institute, and the Baltimore and Washington chapters of the American Society of Women Accountants are also participating.

In the future, students expecting to enter governmental positions may substitute a course in governmental accounting for the first semester of advanced accounting.

### MICHIGAN

#### *Michigan State University*

JAMES DON EDWARDS has been promoted to professor and head of the newly-created Department of Accounting and Financial Administration. RUSSELL FERRINGTON has been appointed instructor. ELMER ANTONEN has accepted a re-assignment to the Department of Continuing Education. B. G. ASCHBACHER was awarded the Ph.D. from the University of Illinois in February.

CHARLES LAWRENCE has a two-year appointment as visiting professor at the Getulio Vargas School of Business Administration, Sao Paulo, Brazil. B. C. LEMKE has accepted the invitation to conduct the control section of the post-graduate program sponsored by the Instituto Post-Universitario per lo Studio dell'Organizzazione Aziendale (IPSOA) in Turin, Italy, during the first half of 1959. Lemke was also reappointed to the editorial committee of *The Internal Auditor*.

Resignations are as follows: W. A. PATON, JR., to accept a position at the University of Michigan Flint Senior College; JOHN MCKEEVER, now at the University of Wyoming; and JAMES BROWN, who has accepted a post at the University of Florida.

GARDNER JONES won the award of the Lansing chapter of NAA last year for most valuable member and for best manuscript.

#### *University of Michigan*

WILLIAM A. PATON entered his retirement-furlough year this spring after completing forty-four years of teaching. WILLIAM J. SCHLATTER has accepted an appointment as associate dean of the School of Business Administration. SAMUEL R. HEPPWORTH has been promoted to the rank of professor. ROBERT L. DIXON was recently made an honorary member of the Australian Society of Accountants with the rank of Fellow.

#### MISSISSIPPI

##### *Mississippi State College*

W. A. SIMMONS has been promoted to professor. R. S. WOFFORD and F. L. HUTCHINSON have accepted appointments at the rank of associate professor. W. H. OWEN has been designated supervisor of accounting laboratories.

#### MISSOURI

##### *Washington University*

The Association lost a loyal member in the passing of WILLIAM S. KREBS on January 3, 1958.

#### NEW YORK

##### *Long Island University—Brooklyn Center*

For fifteen years of service, LEO SCHLOSS was recently presented a plaque from his appreciative accounting students.

##### *New York University*

BRUCE FUTHEY has been reappointed to the committees on education and personnel and governmental accounting of the New York State Society of Certified Public Accountants.

#### NORTH CAROLINA

##### *Duke University*

ROBERT L. DICKENS is making a study of freezer locker plants, financed in part by the U. S. Department of Agriculture. Miss FAY CULPEPPER has accepted an instructorship for the current academic year. GORDON E. BELL is on leave of absence to work as partner in a public accounting firm in Waynesville.

##### *University of North Carolina*

ALTIN G. SADLER was one of the participants in the eighth annual Forum on Finance, held in New York City during June.

#### NORTH DAKOTA

##### *University of North Dakota*

R. D. KOPFENHAVER, head of the accounting department, has been serving temporarily as chairman of the College of Business and Public Administration. ROBERT E. BOGGS, assistant professor, and LYLE E. STEINMYER have joined the faculty. H. D. CARLSON resigned to seek a position on the west coast.

LUDWIK KULAS has been chairman of the committee of the North Dakota Society of CPA's charged with the responsibility of recommending changes in accounting by municipalities. The department is participating with the state society in its annual income tax clinic.

A course entitled "Accounting Reports" has been approved. Its purpose is to improve the expression of accounting graduates.

#### OHIO

##### *Miami University*

GLEN G. YANKEE has been promoted to professor. C. ROLLIN NISWONGER was recently the recipient of a special citation from the Alumni Association in recognition of distinguished service to the alumni program. ARCH M. STOCKARD was recently elected vice-president of the Cincinnati chapter of the Institute of Internal Auditors.

##### *Ohio State University*

DANIEL M. SHONTING and PAUL E. FERTIG have been promoted to professor of accounting. RICHARD V. NORTHRUP has been raised to associate professor. HORACE R. BROCK, from North Texas State College, is visiting associate professor for the year 1958-59.

W. B. JENCKS, national president of Beta Alpha Psi, recently spoke at chapters at the University of Texas, Baylor University, Southern Methodist University, and Oklahoma State Uni-



versity. LAUREN F. BRUSH addressed the Syracuse, New York, chapter of NAA in May on the subject, "Can We Teach Accounting in College?" FERTIG spoke on continuing education before the Toledo chapter of the Ohio Society of Certified Public Accountants. CARSON COX has been elected a director of the Columbus chapter of NAA. JAMES R. MCCOY has been appointed to the committee on membership participation of the AICPA.

WILLIAM J. SERRAINO was presented the HERMANN C. MILLER memorial scholarship.

#### OKLAHOMA

##### University of Tulsa

CLIFFORD E. HUTTON participated in a summer faculty residency program sponsored by The Carter Oil Co., Tulsa. RAYMON C. INGRAM is serving his fourth year as editor of the *Oklahoma Certified Public Accountant*. ROBERT L. LINNELL has a three-year appointment on the budget committee of the Tulsa community chest.

#### PENNSYLVANIA

##### Lehigh University

CARL E. ALLEN has been named national chairman of the membership committee of the American Association of Collegiate Schools of Business, after serving as a member of the committee for the three past years. He is also on the committees on education and legislation of the Pennsylvania Institute of CPA's.

WILSON N. SERFASS was promoted to assistant professor. WENDELL P. TRUMBULL became head of department. EUGENE C. HASSLER resigned to accept a position at Muhlenberg College. FRANCIS M. BRADY, JR. spent a portion of the summer in New York City, as a member of the staff of the American Institute preparing the twelfth edition of *Accounting Trends and Techniques*.

In January the College of Business Administration moved into Drown Hall, its new three-story headquarters.

##### Pennsylvania State University

G. KENNETH NELSON has been named head of the Department of Accounting and Business Statistics, effective July 1; he had been promoted to professor one year earlier. WILLIAM J. SCHRADER was promoted to associate professor in 1957. Joining the staff last year were RICHARD M. COLWELL, lecturer, and FRANK W. GILL, instructor.

CHARLES J. ROWLAND is a vice-president of the Pennsylvania Institute of Certified Public

Accountants for the year 1958-59, and G. KENNETH NELSON is currently serving as president of the Williamsport chapter of NAA.

#### University of Pittsburgh

Appointments for the year include GARNETT F. BEAZLEY, assistant professor, from Wayneburg College, and RICHARD A. RIDILLA, assistant professor, from Baldwin-Wallace College.

C. L. VAN SICKLE and JAMES H. ROSSELL participated in the 1958 business management course conducted by Westinghouse Electric Corporation. CHARLES L. COOPER spent the summer with Haskins & Sells on a faculty fellowship. LOUIS A. WERBANETH, JR. was a speaker at the annual tax institute held in May at The Pennsylvania State University.

#### TEXAS

##### Baylor University

RODERICK L. HOLMES has returned from a leave of absence after two years of graduate study at the University of Washington. A. R. COX has been granted a leave for graduate study. EMERSON HENKE spent the month of August participating in a faculty seminar at Williams College.

This fall the department will initiate a five-year program in accounting leading to the degree of bachelor of accountancy (B. Acc.) upon completion of 150 semester hours of credit.

#### UTAH

##### University of Utah

GORDON J. MILLER has been designated chairman of the department of accounting. This department, discontinued in 1957 as a separate department, was re-established in 1958.

#### VERMONT

##### University of Vermont

ELBERT A. NYQUIST has been promoted to associate professor. L. L. BRIGGS has retired; he will continue to publish *The Accountants Digest*.

#### VIRGINIA

##### University of Virginia

ALMAND R. COLEMAN was a member of the faculty of the Virginia Bankers' Senior Management Institute held at the Graduate Business School in March. He served also on the planning committee and faculty for the first Advanced Management Program conducted by the graduate school in June and July.

## BOOK REVIEWS

JAMES S. LANHAM, EDITOR

### *Accounting*

BRINK AND CASHIN, Internal Auditing, 2nd Ed.....	Robert H. Van Voorhis	706
EASTON AND NEWTON, Accounting and the Analysis of Financial Data	John E. Champion	707
FOULKE, Practical Financial Statement and Analysis, 4th Ed.....	Howard S. Dye	707
MARSHALL, The Accounting (A Novel).....	James L. Cullather	708
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## Accounting

VICTOR Z. BRINK AND JAMES A. CASHIN. *Internal Auditing*, Second Edition (New York: The Ronald Press Company, 1958. pp. vi, 478, \$6.75).

The second edition of *Internal Auditing* provides a long-needed revision of Brink's pioneer (1941) work by the same title. In the seventeen intervening years, the field of internal auditing has expanded significantly. The scope of the internal auditor's work has broadened and its emphasis has shifted from a primarily protective function to one increasingly emphasizing constructive service to management. The number of internal auditors and the number of firms using their services has multiplied. Their professional organization, the Institute of Internal Auditors, has grown to a membership of several thousand. This new edition has been completely rewritten and changed in approach and emphasis to reflect these developments.

The twenty-five chapters are grouped into five sections. Part I, General Background, contains three chapters. These describe the nature of internal auditing, its objectives and services, and the general principles of internal control. Internal auditing is characterized as a special segment of the field of accounting, utilizing some of the same auditing techniques as the public accountant in studying the recorded accounting data. Internal auditing has the special objective of assistance to management through careful appraisal and analysis of internal operations. In addition, internal auditors are responsible for thorough review and appraisal of all forms of management control.

Part II, Organization and Operations, contains three chapters which consider the internal auditor's place in the company organization, his approach and techniques, and his findings and reports. Use is made here and elsewhere throughout the book of the findings of the 1957 *Survey of Internal Auditing* conducted by the Institute of Internal Auditors. The authors also accept and follow closely the Institute's 1957 revision of the *Statement of Responsibilities of the Internal Auditor*.

Part III, Financial Activities, includes seven chapters dealing with the objectives and techniques of auditing the asset and liability accounts and related business functions. In each of these chapters, a brief description is first given of the nature of the activity. Next, internal control standards for the activity are listed and examined. Verification methods are discussed in general terms, without attempting an exhaustive treatment of basic auditing techniques, with which the reader is presumed already to be familiar. Fraud possibilities are considered, and numerous concise examples of case histories of good and bad practice are used to illustrate the discussion. A comprehensive set of audit instructions taken from the manual of a selected (unidentified) company is included to summarize the audit steps for each activity. Finally, consideration is given to the nature of the appraisal which the auditor will make of the various activities reviewed.

Part IV, Operating Activities, has eight chapters covering such topics as sales and billing, purchasing, in-

ventory control, payrolls, production and distribution costs. Chapters in this group also follow the useful practice of describing first the activity in general outline, then covering applicable internal auditing standards, considering the audit approach and illustrating this with generous excerpts from selected company internal auditing manuals, and finally indicating the nature of the appraisal the internal auditor might make.

The last two chapters in this section deal respectively with machine accounting and electronics, and with statistical sampling. The authors feel that electronic data processing will bring about substantial changes in emphasis in the work of the internal auditor. Detailed verification procedures should become less important and testing, analytical, and internal control functions should receive increased attention. The impossibility of the auditor reviewing all transactions necessitates his reliance on sampling. The brief introduction to statistical sampling indicates the desirability of the use of this tool by the progressive internal auditor.

Part V, Other Internal Auditing Activities, includes four chapters which cover other regular and other special activities of the internal auditor, the coordination of his activities with those of the outside auditor, and the present status and probable future developments of internal auditing. These chapters serve to round out the picture of the internal auditor's work and to suggest additional possible areas of useful service to management. The matter of coordination with the work of the outside auditor, previously considered at many points in connection with specific activities, is amplified and consolidated.

Three appendices are included. The first is the 1957 revision of the *Statement of Responsibilities of the Internal Auditor*. The second is the 1957 *Survey of Internal Auditing*. Both of these were prepared and published by the Institute of Internal Auditors. The third appendix is a review of internal control such as might be used by a public accounting firm in connection with an outside audit of a company. It serves here as a comprehensive summary of internal control principles applicable to various phases and activities of accounting and business operations generally.

According to its preface, "This book has been written for internal auditors, public accountants, and corporation executives, as well as for college students of internal auditing." It aims first to be of practical use to those actually concerned with internal auditing work, and second to present internal auditing as a major tool of effective management control. It succeeds in accomplishing both aims and should be useful to the various audiences towards which it is directed.

This text should be a very useable text for a college course in internal auditing, but such a course should have as a prerequisite a sound course in general auditing. Unfortunately, the book has no problem or case material for student use. This shortcoming is common with other books on the same subject because they have been designed for multiple use rather than for use strictly as

tests. The publisher has announced the preparation of a teacher's manual.

ROBERT H. VAN VOORHIS  
Professor of Accounting

*Louisiana State University*

EDMOND E. EASTON AND BYRON L. NEWTON, *Accounting and the Analysis of Financial Data* (New York: McGraw-Hill Book Company, Inc., 1958, pp. 444, \$7.00).

According to the authors, as stated in the preface, their intent has been to develop a text for the person in business, industry, and the professions who needs a basic understanding of the principles of accounting and financial statement analysis, but who has limited time for study and for the college student with the same need who is limited to a one term course in accounting. The authors feel that within the limited time available the person should have the opportunity to study more than the principles of general accounting and bookkeeping. They believe that there should be more emphasis on the accounting theories, principles, and conventions underlying the preparation of financial statements, on the more important principles of cost accounting, tax accounting, and budgeting, and on the analysis and interpretation of financial statements.

The text includes seventeen chapters divided into three parts. Part I, Fundamentals of Accounting, discusses basic accounting concepts and terminology. Detailed attention is given to a step-by-step description of the accounting cycle as applied to a service and trading enterprise. Three chapters are devoted to a general description of special journals and subsidiary ledgers, adjusting and closing entries, and the preparation of financial statements. Included in the final chapter of this section is a most interesting flow chart of the accounting process, summarizing the flow of funds in a business enterprise. There is a discussion of internal control procedures, and a comprehensive review of the major concepts of accounting.

Part II, Special Areas of Accounting, includes five separate areas of accounting. The first two chapters describe the terms and problems connected with the accounting for proprietorships, partnerships, and corporations, including the advantages and disadvantages of each form of organization. The authors stress the point that the major difference in accounting for the different forms of ownership is for those transactions that affect invested and earned equities. The next chapter of this section provides a summary of terms, problems, and procedures involved in accounting for sales, including C.O.D. sales, departmental sales, installment sales, and sales on consignment. One Chapter, Product Cost Accounting, describes accounting for a manufacturing concern, including in a rudimentary fashion, job order cost accounting, process cost accounting and standard costs. The final chapter in this section, Accounting for Taxes, gives a brief discussion of the various taxes with which the business man is confronted, and how the business is affected by such taxes.

Part III, The Analysis of Financial Data, offers an excellent historical background of statement analysis, a

useful discussion of the varying needs for financial data, and the limitations of financial data. This section emphasizes the value of the financial statements as a tool of management through providing data for special reports. In addition to a discussion of the common financial reports, there is a discussion of the effect of the price level changes on the statements. An excellent feature of this part of the book is that a number of specific questions which financial ratios help to answer are presented, as well as an explanation of how management uses financial ratios and data after they have been computed. The final chapter deals with the preparation of budgets and the manner in which financial statements assist in the preparation and evaluation of budgets.

The text includes a summary of the material covered in each chapter and provides questions on the material at the end of the chapters. Ample problems covering the subject matter of each chapter are presented in a separate section of the book.

Throughout the text emphasis has been placed on the importance of a knowledge of the basic concepts of accounting. The authors have included many surveys of annual financial statements and requirements and recommendations of governmental regulatory bodies and the professional societies.

Some topics, especially in the first two parts, have been covered so briefly that they will not give the student complete understanding of the subject matter. However, the coverage seems ample and would serve a much more useful purpose for a non-accounting major, than the traditional elementary accounting text. The authors have fulfilled their aim by giving a panoramic view of the major phases of accounting and how accounting data can be used without excessive emphasis on the bookkeeping detail.

JOHN E. CHAMPION  
Associate Professor

*Florida State University*

ROY. A. FOULKE, *Practical Financial Statement Analysis*, Fourth Edition (New York: McGraw-Hill Book Company, 1957, pp. xx, 712, Price \$10.00).

It seems less than proper to call this book the "new Fourth Edition," since comparison with the first edition, published in 1945, reveals that twenty-three of the twenty-four chapters of the new book follow the first edition virtually word for word. Only the minor alterations reflecting changes in SEC regulations provide exceptions. This work is not really an example of the "creative obsolescence" which justifies so many revised editions. One must conclude however, either that little new material in the area of statement analysis has appeared in the last thirteen years, in which case a new edition would not be necessary, or that this book represents a presentation of old material in a new jacket. Many of the criticisms which follow undoubtedly applied to earlier editions of this work, as well as to the present edition and therefore, it is difficult to understand why this new edition did not attempt to integrate modern thinking both of accountants and students of finance.



Past editions of this book perhaps have been best known for their treatment of ten common financial ratios. This coverage remains practically unchanged in the fourth edition. Few other books are as comprehensive in their financial ratio approach to statement analysis, and the practical cases covering various types of businesses represent a real teaching aid, but the author has failed to exploit fully these possibilities. The mechanical explanation of these financial ratios is excellent, but his treatment of causal forces lying behind the ratios leaves much to be desired.

A large part of this inadequacy merely reflects the tendency of business and credit analysts to concentrate upon the analysis of costs, usually historical costs, with only token lip service paid to the importance of the demand side in interpreting financial statements. Consequently, the chapters end with rather arbitrary "maxims." For example, the book states that heavy inventories, like excessive fixed assets, should be avoided. Such a statement is all right as far as it goes, but heavy inventories might be highly desirable during wartime or periods of shortage, as well as when significant increases in inventory prices are anticipated. At times the author fails to distinguish clearly between growth needs for credit and the problems of a stable firm or industry. In many cases, the accuracy and durability of the demand forecast is the important question, and adverse ratios in the statements may merely mirror economic fluctuations and forecasting errors.

The author apparently has been reluctant to incorporate modern accounting and economic techniques for dealing with price changes. Few readers are likely to be aware of just how much recent price fluctuations, primarily inflation, have reduced the validity of using historical costs in the measurement of income and the valuation of assets. Much of the recent work dealing with the impact of inflation could have been integrated. Books such as R. C. Jones, *Effects of Price Level Changes on Business Income, Capital and Taxes* or P. Mason, *Price Level Adjustments—Basic Concepts and Methods* contain many suggestions for improved reporting methods. As a consequence of this omission, the writer frequently fails to discuss adequately the limitations of his techniques for analyzing financial statements. Business and credit analysts are lulled into the belief that these techniques actually provide scientific answers. In the past this has meant that such analysis has been widely but erroneously used as a substitute for human thinking.

From the point of view of the practicing accountant probably the most glaring shortcoming is the failure to use modern accounting terminology. In the area of balance sheet terminology, using the Eleventh Edition of *Accounting Trends and Techniques* as a standard, adherence to old-fashioned forms is particularly striking. For example, the titles "reserve for depreciation" and "reserve for bad debts" are used rather than such terms as "accumulated depreciation" and "estimated uncollectible accounts." Similarly, the author clings to the use of "surplus" and "capital surplus," quite at variance with the terminology recommended by the AICPA. Perhaps he felt that such terminology would make the

book more meaningful to men working in the statement analysis field and who had learned the older forms. Since businesses are changing to conform to modern accounting practices, it would seem that a revised book on the subject would recognize these changes. Certainly the failure to recognize current terminology would seem to seriously limit the usefulness of this book as text material in current college courses.

A few errors in the accounting treatment of certain items were discovered. For example, in the statement of the sources and applications of funds the author adds back depreciation correctly, but calls it a non-cash expense rather than referring to it as a non-fund or working capital expense. He does the same with "reserve for bad debts." By pulling both out of working capital he overstates working capital in this statement. Such errors, however, were few in number.

This text is more suitable for courses in short term credit analysis than for courses in either investment analysis or managerial decision-making. Like the old editions, it is a valuable handbook on the mechanics of ratio analysis. It may be of particular interest to the practicing accountant since it frequently refers to actual business practices within selected industries, as well as the regulations of the SEC and the AICPA. In addition, most of the chapters contain rather comprehensive problems, many of which have been taken from AICPA examinations. If you were well satisfied with earlier editions, you will like this one also.

HOWARD S. DYE  
Professor of Economics and Finance

The University of Tennessee

BRUCE MARSHALL, *The Accounting* (Boston: Houghton Mifflin Company, 1958, pp. 374, \$3.95).

"Of course there was no comparing the importance of the two zeals (accounting and painting): it was ledgers and cashbooks and not Picasso and Cezanne which made the world go round." Novels containing words as these are few and when they come along accounting teachers are hopeful. A novel sometimes will light the sparks of student interest where other teaching devices fail. Bruce Marshall, a well-known novelist and chartered accountant, may have been expected to write a classic in accounting fiction when he sat down to relate a British accounting firm's attempts to track down fraud in a Paris bank. Unfortunately, he didn't write it. From a pedagogical point of view the book is unduly concerned with things Parisian. Elaboration of the assertion that "even accountants are not exempt from the itch of original sin" makes the book a questionable entry on undergraduate reading lists. Still, accountants will enjoy this book.

They will enjoy it not because the defalcation or its detection is particularly remarkable. But they will enjoy it because the picture it paints of auditors at work is a faithful one. British audit clerks of the thirties know the opportunity for malice or for charity that a simple transposition offers, the despair of making a school-boy error, the deflation of the ego when a bright conclusion is found ridiculous, the inequity of working under the incompetent, and the agony of working under the



generally cutting competent. With accountants of every decade, they knew the toil, the mean compensation, the uncooperativeness of clients' employees, the lack of status, and withal, their own willingness to do the job. This is the nobility of auditors.

Accountants also will enjoy the auditing rules scattered throughout the novel:

"An auditor is a watchdog and not a bloodhound. . ."

"It wasn't enough to check and check again . . . you had to countercheck your rechecking and then countercountercheck your countercheckings."

"Auditors shouldn't let themselves be sidetracked by preconceived notions."

Much of the book is concerned with the personal lives of the auditors. The humanity of accountants is something others may forget. The common notion is amusingly presented in the form of one partner who makes his wife report her household accounts in gold. But, on the whole, the book will make for greater awareness of the observation uttered by the senior London partner, Sir Eric Stugby-Wharton: "There are chartered accountants and chartered accountants, you know."

JAMES L. CULLATHER

Associate Professor of Accounting

University of Notre Dame

NATIONAL ASSOCIATION OF ACCOUNTANTS, *Current Practice in Accounting for Depreciation* (New York, Research Series No. 33, April 1, 1958, pp. 36).

The National Association of Accountants has performed a valuable service in compiling through its research organization this timely survey of industrial depreciation practices.

Something of a revolution has occurred in depreciation practice in recent years. Perhaps the greatest single stimulus to change was the Internal Revenue Act of 1954, which permits a more liberal depreciation policy than had hitherto been allowed for income tax purposes. Less spectacular than the changes in the tax laws, but perhaps with far greater significance to our economy, has been the steady erosion of inflation eating into asset values and rendering obsolete our historical depreciation practices just as surely as modern technological advances are rendering obsolete many of our productive facilities.

Recognizing that these changes are taking place, a special Research Committee of the National Association of Accountants, with the cooperation of 55 industrial corporations known to have given serious thought to depreciation questions, set out to ascertain the extent to which trends have changed and to attempt to determine what, if any, new depreciation practices are being developed. The Committee's report is organized to investigate the extent to which the periodic depreciation charge is serving the purposes for which it is intended. These purposes, treated in separate chapters, are:

1. The determination of income subject to Federal income tax.

2. Management of a company's finances—particularly funds for replacement, modernization and expansion.
3. Determining periodic net income and financial condition for reports to management and stockholders.
4. Determining product costs for internal management purposes.

It is ironic that the first indicated purpose of the depreciation provision should be considered the determination of a depreciation cost deductible for income tax purposes. No matter how accountants argue the theory of matching revenues with expiring fixed asset values, the real determinant in practical situations is often the deductibility for income tax purposes. And this is a very practical consideration. Obviously, unless the deduction of the depreciation charge is permitted for income tax purposes, half of the depreciation provision is being paid out in taxes. The influence of tax requirements is seen in the fact that prior to 1954, all but three of the 55 companies participating in the study used the straight-line depreciation method for both income tax and accounting purposes. After accelerated methods were permitted by the 1954 Code, forty of these companies elected one of the methods of "fast write-off." In most instances, barring liquidation or a change in income tax rates, the accelerated methods of depreciation provide permanent advantages over the straight-line method.

Study of the second purpose of depreciation, that of financial management, considers the function of depreciation in the provision of funds. In this respect, the study points out three different viewpoints as to what should be accomplished by depreciation charges:

1. The recovery of historical costs.
2. Provision of funds necessary for keeping facilities abreast of technological processes in maintaining a competitive position.
3. Provision of buying power equal to that possessed by dollars at the time originally committed to the depreciable assets now being depreciated.

It is obvious that, in a period of rising price levels, historical cost is an inadequate measure of the expiration of asset values. Whether the funds generated by depreciation charges are used to replace existing facilities, or for any other purpose that management desires, unless depreciation is charged in an amount equal to the buying power sacrificed by owners when their capital was committed to fixed assets, we are not recovering the capital put in the business. Instead, we may be levying on the stockholder an assessment of capital to pay income taxes and dividends. This levy on capital has been reported by a number of corporations and has been the subject of study by committees of the American Accounting Association.

Despite the recognition of its weaknesses, actual depreciation practice in this country remains primarily based on historical costs. The N.A.A. study points out that methods are available which have sufficient precision for measuring depreciation in terms of current

purchasing power, but there has been little actual impetus to correct the deficiency of historical cost depreciation. The reasons offered for adherence to historical costs are, to some extent, a condemnation of accountants and tax authorities alike. In the first place, the study points out, there has been no widespread knowledge of the inadequacy of depreciation based on historical cost. A second reason for using historical cost is the necessity of competing with companies who fail to recognize the necessity of setting selling prices sufficiently high to provide a recovery of buying power. The third, and perhaps the most significant reason for the use of historical cost, is the fact that this is the only cost basis presently recognized for income tax purposes.

In the third purpose of the depreciation provision, that of measuring periodic profit or loss, the influence of income tax requirements again is clearly evident. Forty-nine of the 55 companies studied use the same method of depreciation for book purposes that is used in their income tax returns. Here the study is dealing only with the *timing* of the allocation of *historical* costs, and omits any consideration of the *adequacy* of depreciation provisions in determining periodic profit or loss. While timing is important, the amount of the depreciation charge can be even more significant. This matter was considered under the heading of financial management, but it is readily seen that a depreciation provision adequate to provide funds to replace committed purchasing power must be a charge against the current operations which are using these committed capacities.

Companies who use a declining charge depreciation method for income tax purposes, but use the straight-line method for reporting, do so for a number of reasons. Perhaps the most practical consideration is the fact that straight-line depreciation will provide a higher reported book profit, while an accelerated method provides income tax advantages. This difference arises, not only through use of the methods of depreciation permitted by the 1954 Code, but is also applicable to companies having facilities being amortized under Certificates of Necessity.

The reconciliation of the difference between book and taxable charges is an interesting one. Most of the companies studied which use Certificates of Necessity for tax amortization, but use straight-line depreciation in determining book income, make a provision for deferred income taxes representing those taxes that would be payable in future years when the depreciation used on the books is no longer deductible for income tax purposes. Similar differences arise when the accelerated methods of depreciation permitted under the 1954 Code have been adopted for tax purposes while straight-line methods are used for accounting purposes. It is significant that none of the companies participating in the study has followed the deferred tax treatment in this latter situation. The two reasons generally reported were (1) the amount of deferred tax is not material, or (2) the tax currently saved will be deferred indefinitely because a continuing expansion of depreciable assets is anticipated. While the first reason is valid, there is no basis to the second.

Perhaps these companies have been following Ac-

counting Research Bulletin No. 44 of the American Institute of Certified Public Accountants. This bulletin, in discussing the difference between book and tax depreciation under the 1954 Code, states that "in the ordinary situation deferred income taxes need not be recognized." Many accountants feel that this bulletin is not sound in this respect, and it is understood that a revision is presently being studied. Whether or not a continuing expansion of assets may be anticipated, the deferring of income taxes because of differing depreciation bases is an accounting principle that cannot be ignored. The continual replacement of assets may mean that the payment of deferred taxes is postponed far into the future and the amount of deferred taxes may remain relatively constant. In any event, sound accounting would seem to call for recognition of the deferment of taxes.

In studying the use of depreciation as a cost for managerial guidance, the companies studied depart from both book and tax depreciation methods. Several of the companies, for measuring productivity of divisions, etc., restate all fixed assets in terms of current price levels. The statement is made that the increase in cost levels has been so great that any company using facilities acquired before 1941 should take replacement value into consideration in establishing pricing and dividend policies. Three of the companies studied prepare all product costs for pricing purposes using depreciation on current replacement value of assets. Several others make more limited use of depreciation on replacement value.

Perhaps the most sobering, though far from original, conclusion to be drawn from the study is the fact that no one method of depreciation accounting is commonly usable for all purposes. What starts out as a seemingly simple problem of matching the expiration of asset values with the use of those values in the production of revenue ends up in a hodgepodge of book provisions, tax provisions, deferred income taxes, and then what really is of most use to management, a charge based on expiration of the purchasing power invested in fixed assets. We are all indebted to the National Association of Accountants for this contribution to the literature on the subject.

J. R. JONES

Arthur Andersen & Co.  
Atlanta, Georgia

HOWARD S. NOBLE AND ROLLIN NISWONGER, *Accounting Principles*, Seventh Edition (Cincinnati: South-Western Publishing Company, 1957, pp. 741, Price \$6.00).

Noble and Niswonger's *Accounting Principles* has reached the Seventh Edition. It is a first year accounting text using the individual proprietorship approach and is written in a clear, understandable style. Without question this is the most completely and clearly illustrated text on the market. If it is the accounting teacher's objective to emphasize bookkeeping and accounting techniques—"the how to,"—then this text is excellent. The many long and repetitious problems will give the student considerable practice in recording the transac-

tions of business. Another strong point of this text is the financial statement approach contained in chapter two in which the authors illustrate the classified balance sheet and the income statement. This gives the instructor an opportunity to introduce the accounting terminology of the financial statements and financial analysis. The student is thus helped to understand the meaning and usefulness of the financial statements. With this approach the teacher can insist on proper statement preparation throughout the entire first semester.

The outline of the Seventh Edition is substantially the same as that of the previous Edition except that the topics treated in chapters two and three, "The Balance Sheet" and "Income Statement," of the Sixth Edition have been combined into one chapter in the Seventh Edition. The chapter on "Budgets" has been omitted from the later edition altogether. The Seventh Edition has added a few "Exercises" to the questions and problems section of each chapter. In many cases this has been accomplished by merely reclassifying some of the more complex questions into the new category entitled "Exercises."

Those who are not familiar with the previous editions may be interested in the general organization:

#### First Course:

- Part I. Accounting Reports (Two Chapters)
- Part II. The Accounting Cycle for a Non-Trading Business (3 Chs.)
- Part III. The Accounting Cycle for a Trading Business (4 Chs.)
- Part IV. Accounting for Interest, Prepaid, Unearned, Accrued Items (4 Chs.)
- Part V. Asset Valuation (3 Chs.)
- Part VI. Problems in Recording Transactions (2 Chs.)

In addition to these fifteen chapters the first half of the text contains numerous questions, exercises, and problems for each chapter and a practice case, "James Wholesale Shoes,"—Part I, designed to review the bookkeeping for a trading business. The case is stated at the end of Part III. The second part of the practice case is a continuation of the "James Wholesale Shoes," requiring the student to record the second month's business and review the materials covered in Parts III, IV, and V.

#### Second Course:

- Part VII. Accounting for Payrolls and Taxes (2 Chs.)
- Part VIII. Partnerships (2 Chs.)
- Part IX. Corporations (4 Chs.)
- Part X. Departmental and Branch Accounting (2 Chs.)
- Part XI. Manufacturing and Cost Accounting (2 Chs.)
- Part XII. Using Accounting Information (2 Chs.)

In addition to these fifteen chapters the text contains numerous questions, exercises, and problems for each chapter and a practice case, Adams & Dillon,—Part I,

designed to review the primary features of Parts VI, VII, and VIII. The practice case requires the student to record the transactions of business of a wholesale and retail automobile accessories business. It is divided into two parts, the first part uses the partnership business organization, while the second part requires the student to incorporate the business and review the material contained in Part IX in addition to a review of the accounting for a merchandising concern.

Some of the outstanding features of this revision are its logical chapter sequence, the clear and understandable explanations and descriptions, and the clear illustrations and wide variety of good questions. The text contains three outstanding chapters. These are chapters 2, "Balance Sheet and Income Statement," 16, "Accounting for Payrolls—Payroll Taxes," and 17, "Accounting for Taxes." The chapter on "Payroll Taxes" is noteworthy because of its clear, complete and understandable presentation. The material concerning Federal Income Taxes is, in my opinion, a great asset to a basic accounting text especially from the point of view of the non-accounting major who will probably not get a full course in Federal Income Taxes. This chapter introduces the student to Federal Tax terminology in a very concise and understandable manner.

Although the text has many virtues, it is not without weaknesses. The most basic weakness is its long repetitious problems, the solutions to which can almost be copied from the text materials. The student rarely encounters a thought provoking problem during the entire first semester's work (the problems for chapter 11 are a happy exception). A second weakness is that the illustrated special journals fail to provide for flexibility and force the student to record only a portion of routine transactions in the cash receipts and cash disbursements journals, the remainder of the entry to be recorded in the general journal. This is unrealistic and very confusing to the student. Furthermore, the extremely important matter of bank reconciliations is treated entirely without reference to the cash receipts and cash disbursements journals which were discussed earlier in the same chapter (8). It is unfortunate that the authors make reference to the check book stubs in connection with their discussion on bank reconciliation as this procedure may require still a further reconciliation with the cash receipts and disbursements journals in order to locate errors made in recording the information from the check book stubs into the books of original entry.

It is unfortunate that the chapter on Budgeting was omitted from this edition, for most teachers feel a strong need for more, not fewer, chapters relating to management uses of accounting.

For the teacher of accounting who is not familiar with the publishers of this book, South-Western Publishing Co., it may be of importance to indicate that in addition to providing the usual teaching materials they also provide "check answers" and will furnish those who adopt the text copies of standard examinations for each chapter. These examinations are particularly helpful to the new instructor, for he can use them as they are, or he can use them as a guide.

In conclusion, it is my conviction that this is an outstanding text for use by teachers who wish to emphasize the bookkeeping aspects of accounting.

JOSEPH R. TARBET

Associate Professor of Business Administration  
State College of Washington

WILLIAM A. PATON and ROBERT L. DIXON, *Essentials of Accounting* (New York: The Macmillan Company, 1958, pp. 800, Price \$7.50).

In addition to the fact that Professor Dixon is co-author, there are other almost equally important reasons why this book is not represented as a routine revision of Paton's *Essentials of Accounting* published in 1949. These are:

1. Simplification in language. Presumably the authors have taken seriously the criticism occasionally leveled at the Paton texts that the analysis and continuity were often obscured by long, complex sentences, complex words, and detailed illustrations. The language has been simplified to a remarkable degree, without any apparent sacrifice of the precise phrasing and expression characteristic of the Paton texts.

2. Shortening of certain topics, primarily procedural matters, and elimination of auditing discussion. This is additional evidence of the simplification mentioned above. Also, it represents some concession to students who do not intend to go on, by reducing emphasis on those matters which are the real concern of only those who are preparing for professional accountancy.

3. Increased emphasis on cost accounting, consolidated statements, and the effects of changes in the price level. Each of these topics has a complete chapter devoted to it. The expanded treatment of each constitutes a major improvement, particularly in the usefulness of the book as a text in a one year terminal course.

4. Reorganization of the subjects, to permit coverage of the first eighteen chapters in a terminal one semester course. It is perhaps impossible to achieve this objective to the satisfaction of all, probably because one semester is too short a period for coverage of even the basic elements, particularly at the depth contemplated by this book. The first half of the book is well-arranged, but some may criticize the reorganization for sacrifice of continuity in the second half.

The remarkable thing about these changes is that they have been accomplished without any sacrifice of the fundamental reasoning and penetrating analysis of the earlier texts written alone by Professor Paton. The breadth of treatment of the basic principles remains unequalled by other books in the field. The authors do not hesitate to give full consideration to all of the important controversial problems, and to give answers based on sound judgement. No concession is made to expediency, and there is no attempt to defend present practice by rationalizing or concealing the weaknesses in it.

The shortening and simplification in certain areas improves readability, but in no case has the material been watered down. The authors emphasize this basic educational philosophy in the preface: "Let's not under-

rate the capacities of the young men and women in our colleges and universities; and let's remember that strength is not developed by a weak diet."

As a text for a one year course in accounting principles, this book is considerably better than any of its predecessors. As an authoritative addition to accounting literature, devoted to the task of improving the usefulness of accounting, its position remains unchallenged.

The text is accompanied by *Problems and Practice Sets for Essentials of Accounting*, by Dixon, W. A. Paton, Jr., and Robert H. Cojeen, as well as ruled forms in separate cover, and teachers' guide.

PAUL FERTIG

Associate Professor

The Ohio State University

JOSEPH H. VLAEMMINCK, *Histoire et doctrines de la comptabilité* (Paris: Dunod, 1956, pp. 231, French francs 1,750).

This book by a Belgian author is the first French history of accounting from its modest beginnings in ancient Mesopotamia and Egypt to the present time. Dr. Vlaemminck fortunately does not succumb to the fascination of accounts kept on clay tablets or written in demotic script on papyri. He points out that such records are numerous but difficult to interpret. As for Greece and Rome, a few inscriptions and references in speeches and literary works are all that have survived and our information is still scanty and vague. In any case, ancient civilization was nearly destroyed by the barbarians, and bookkeeping had to make a fresh start with the revival of trade at the time of the Crusades. From then on there is continuous development and the progress of accounting through the centuries is easier to follow.

The author wisely refrains from giving double-entry bookkeeping a place and date of birth and from accepting all the views of Federigo Melis on the subject. Although this method may have been born in Tuscany rather than in Genoa, the available evidence is far from conclusive. There is no doubt that double entry was widely practiced prior to Luca Pacioli, whose merit is simply to have published the first treatise on the subject (1494). Besides, it is probable that he just used a manuscript circulating in the schools of Venice, since Pacioli was a Tuscan, but his treatise is in Venetian dialect. From 1500 to 1800, accounting made little headway, because most of the textbooks were primers teaching only the mechanics of bookkeeping and stating a few basic principles. These manuals were far behind the actual practice of the counting house. Edmond Degrange père was the first who attempted to get accountancy out of this rut and to base his classification of accounts on theoretical premises.

The nineteenth century saw the development of several rival schools which sought to formulate comprehensive theories and to put accounting on a scientific basis. The Italians especially distinguished themselves in the creation of systems from Giuseppe Cerboni's logigramography to Fabio Besta's materialism, which emphasized the measurement of economic values as the fundamental purpose of keeping accounts.



In Mr. Vlaemminck's own view, accounting, like statistics, is based on the selection and classification of numerical data. However, instead of being tabulated, they are presented in an integrated system of accounts which records all changes in the components of assets and liabilities and is designed to reveal operating results in order to guide management in decision-making. In other words, accounting is a tool of management.

Although this book has many merits, it should be pointed out that the bibliography has serious gaps. Thus the author ignores Tommaso Zerbi's book, *Le origini della partita doppia*, Onko Ten Have's *De Leer van het Boekhouden in de Nederlanden tijdens de zeventiende en achttiende eeuw*, and important periodical

articles, not to mention source publications, such as the Badoer ledger, now available *in extenso*. The information given is one-sided: there is a great deal on recent developments in France and Italy, but Germany is slighted and, surprisingly, England and the United States are even more neglected. For example, not a word is said about the rise of public accounting in these two countries. Since an English edition is being planned, the author will do well to bring his material up to date in the historical part and to expand greatly his discussion of recent trends in Anglo-Saxon countries.

RAYMOND DE ROOVER  
Professor of Economics

Boston College

### Economics

WENDELL C. GORDON. *INTERNATIONAL TRADE: Goods, People and Ideas* (Alfred A. Knopf: New York, 1958, pp. 647, \$6.75).

Professor Wendell C. Gordon from the University of Texas is an expert in Latin-American affairs. He is the author of a book on the Expropriation of Foreign-Owned Property in Mexico, a book on The Economy of Latin America and numerous articles on related subjects.

The major topics covered in his treatise on international trade are: Units of Measurement of International Trade, Traditional Theory, Balance of Payment, Movements of Goods, Foreign Exchange Problems, Capital Movements. This is an orderly and teachable sequence. Each one of the thirty-six chapters starts with a summary, thus orienting the reader and also assisting the instructor who at a glance is reminded of the topics he may want to discuss in the forthcoming lecture.

The over-all approach is an historical one. In the discussion of traditional theories the author goes back to mercantilism. The discussion of foreign investments starts with the European situation in the middle ages. The basic assumption of the book is the desirability of maximizing a combination of: (1) better level of living, (2) individual freedom of action, and (3) security. The smooth flow of foreign trade could certainly contribute to a better standard of living if we continued to specialize in the fields in which we are efficient and exchange our goods for the goods of other countries, which these countries can produce better and cheaper. It could also contribute to more individual freedom, if we could move across the borders without formalities, seek jobs or organize enterprises wherever we happen to be. And security would certainly be considerably enhanced, because as long as we trade we do not fight. The achievement of the three desirable aims remains an illusion, as long as we have to cope with all sorts of restrictions, high tariffs, quotas, licences, embargoes, subsidies, cartels, state trading and other schemes of control, ably and exhaustively discussed in the six chapters of part four, devoted to the Movements of Goods.

In a conclusive remark to chapter ten the author mentions correctly that in a "society organized as ours,

producer pressure groups on the whole are stronger and better organized than consumer pressure groups." As a result, in spite of the fact that people in general are just as interested in more goods at lower prices as in higher wages and profits, the balance of pressure of free private enterprise is actually better calculated to further producer interests than consumer interests. As a result countries try to encourage exports, which is a rather futile effort, as exports must be paid by imports. After the discussion of State Trading the author could not resist the temptation to crystal gaze a bit. Let us hope that he predicts correctly, saying that "our current difficulties with the Russians may turn into a sort of bitter stalemate which with the passage of time can lead to a situation in which the parties, although not liking each other, will have found out that they can get along." "Whether this is wishful thinking or not, it is the only feasible assumption on which to operate when the alternative is atomic war." The touchy question of expropriation and the position of the United States Government as protector is discussed in a chapter dealing with the post-world-war II attitudes towards investments abroad. In his evaluation of the problem the author mentions that "the American who cannot accept the internal institutional organization of a foreign country as he finds it, or as the local citizenry want to make it, should stay home."

Formulation of sound policies is the ultimate aim of analysis. The realizing of this aim through coordination of policies, combined in a workable program is discussed in the final chapters.

The author therefore has three different yet related objectives: (1) the presentation of current thinking in the field of international economic relations, (2) the suggestion of a co-ordinated pattern of policies which would make possible the existence of viable world economy, and (3) making his work readable. The book certainly accomplishes all three aims and the author is to be complimented on the achievement. His book is scholarly and yet within comprehension of college students.

MICHAEL ALBRY  
Professor of Economics and Finance

Boston College



NATIONAL BUREAU OF ECONOMIC RESEARCH, *Investing in Economic Knowledge*, Thirty-eighth Annual Report (New York: 261 Madison Avenue, 1958, pp. 108).

Solomon Fabricant, Director of Research for the National Bureau of Economic Research, discusses the aims of economic research and the many uses that are made of its findings in the Thirty-eighth Annual Report. This report reviews the National Bureau's work to date and points out the returns on investment in economic knowledge and indicates the issues on which research is needed.

The report is divided into four parts:

Part One: Investing in Economic Knowledge

1. Studies Completed
2. Research Under Way
3. Studies Begun
4. Conferences on Research
5. The Road Before Us

Part Two: Staff Reports

1. National Income, Consumption and Capital Formation
2. Business Cycles
3. Economic Growth
4. Banking and Finance
5. Government Activity and Finance
6. International Economic Relations

Part Three: Reports on Conferences

Part Four: Personnel and Sources of Support

J. S. L.

AUSTIN H. PECK, *International Economics* (Thomas Y. Crowell Company: New York, 1957, pp. 461, \$6.00).

Professor Peck's book is a conscientiously prepared text for a one semester course in International Economics. The first part deals with the practical side of international Economics. The first part deals with the practical side of international payments technique, with the balance of payments, compensatory official financing, and with the mechanism of the rates of exchange. Part two deals briefly with the international economic theory. The seven chapters of part three are devoted to trade controls, arguments for protective tariffs, import quotas, exchange controls, monopolies in international trade.

Part four contains six chapters and deals with postwar monetary arrangements, underdeveloped countries, the international financial institutions, the European economic recovery and the United States commercial policy.

The impact of our imports on the economics of other countries is clearly explained and the advantages of international trade to all participants made very explicit. An efficient use of world's resources would not be possible without an interchange of goods and services between countries. The author stresses that the aims of domestic economic policies, geared towards full employment, could not remain without reflexive influences on foreign trade policies. These policies are discussed in the chapter on the Reasons for Trade Controls, against which controls most of the foreign trade participants, including ourselves, are constantly complaining.

With regard to non-economic circumstances, the author mentions that "military consideration may lead to controls over exports in the interest of preventing critical materials from falling into the hands of an actual or potential enemy," considerations which have to be taken into account by importers and exporters.

With regard to our foreign investments the author has one consolation for those who lost money abroad. "Despite the wave of defaults and the general bad record of American foreign investments in the thirties, it seems only fair to point out that foreign investments were not the only ones that went sour in this period." "Considering the record of international investments as a whole over a longer period of time, the results are not as bad as one might expect in view of what happened in the thirties."

A lengthy discussion of the European Economic Recovery ends with a rather pessimistic but correct remark that the "spirit of nationalism has been strong, and national sovereignty has been jealously guarded."

The author is to be complimented on the effectiveness of his presentation. The conclusions are clear and compact. Professor Peck writes a clear, direct, interesting style and his book will certainly be well received by university instructors.

MICHAEL ALBERY

Professor of Economics and Finance

Boston College

### Electronics

ROBERT DORFMAN, PAUL A. SAMUELSON AND ROBERT M. SOLOW, *Linear Programming and Economic Analysis* (New York: McGraw-Hill Book Company, Inc., 1958, pp. 527, Price \$10.00).

This book is designed to demonstrate the relation between economic theory and linear programming to the non-mathematical economist. In my view, judged by this criterion, the book does a good job. The authors make no pretense of making an original contribution to the programming literature. They concentrate at every point on relating linear programming to economic theory.

The accountant who has a little background in eco-

nomic theory should be able to read the first half of the book and gain a great deal. If the reader who is ignorant of linear programming is willing to take the time to read carefully, he can increase his knowledge to the point where he can use the simplex technique in solving simple linear programming problems. The authors do a good job on both the explanatory side and the "cook-book" side in this respect. The book also has an interesting appendix on matrix algebra which the serious non-mathematical reader can study with benefit.

The approach taken in the book is to formulate the linear programming problem in terms of two simple examples. One of the examples is a problem in international trade and the other is the minimum diet problem

first posed by Cornfield. The authors then follow through the examples and explain the theory of programming and the meaning of the dual theorem through these examples. The beauty of the diet problem for these purposes is that no substantive knowledge of nutrition is needed to follow the authors' explanations.

The biggest defect of the book from the standpoint of an accounting audience, I suspect, is the absence of the management science flavor of linear programming. There are three production problems discussed, but the beginning reader will get no feeling or understanding from these problems of the management potential of the technique of linear programming. For these purposes I suggest that the interested reader examine the article by Charnes and Cooper, "Management Models and Industrial Applications of Linear Programming" in the October, 1957, issue of *Management Science*.

R. M. CYERT

Associate Professor, Economics and  
Industrial Administration

Carnegie Institute of Technology

C. C. GOTTLIEB AND J. N. P. HUME, *High-Speed Data Processing* (New York: McGraw-Hill Book Company, Inc., 1958, pp. xi, 305, \$9.50).

*High-Speed Data Processing*, according to the Preface is an attempt to present important principles and general techniques for processing data at high speeds, particularly for business purposes. A wide range of topics is covered, from the use of symbolic characters to represent information in a data processing system to the latest developments in automatic programming. Operation, utilization, and benefits of data processing machinery and equipment are discussed without regard to special concentration on any particular machine. To focus attention on the operational principles of all high-speed data processing equipment, a hypothetical machine which is a synthesis of several existing machines is used as a model.

Topics covered by this book include: an introduction to computers and computer systems, information representation systems, functions of computer units, organization of computer units, instruction codes, systems analysis, programming, coding, checking, comparative machine techniques, filing, applications in accounting and insurance, planning, scheduling, and automatic programming. The treatments of machine reliability and checking results, the use of random access techniques in connection with filing, and recent developments in automatic programming are particularly up-to-date.

The book opens on an historical note, tracing the continuum of computational needs from the ancient Babylonian and Hindu cultures to modern work on calculating and computing machinery, beginning about 1940. Milestones along the way, in the opinion of the authors, were Pascal's invention of the adding machine in the 17th century and Babbage's "Difference and Analytical Engines" of the 19th century. The need for high-speed computing is said to arise from business and economic studies complicated by many variables, such as input-output relationships in U. S. industry.

Information representation systems discussed include radix notation, binary notation, fractional and negative numbers, coded decimal systems, error detecting and correcting codes, and alphanumeric characters. Functional computer units discussed include pulses, clocks, serial-parallel machines, flip-flops, mercury delay line storage, electrostatic tube storage, magnetic-core storage, magnetic drum storage, magnetic tape storage, adders, accumulators, multipliers and shifters, buffer stores, readers and punches, transcribers, tape-to-card and card-to-tape conversion, and printers.

The discussion of machine organization merely expands on the simple computer concept of five essential units: input, storage, arithmetic, and output, all presided over by a control unit. The growth of any computer system is logically described as an extension of the five units in a balanced manner.

Instruction codes are classified as arithmetic, control transfer or "jump," branching, input-output, auxiliary storage, auxiliary register, and special. The discussion of systems analysis and programming emphasizes that flow charts are an integral part of a workable machine program, and should always be prepared as an aid in visualization. Applications of especial interest to accountants include payrolls, mortgage amortization plans, income tax calculations, inventory control plans, and utility billing systems. Each of these applications is carefully flow charted and the applicable program is illustrated.

Program checks and programmed checking devices are discussed and illustrated, along with a tabulation of common coding mistakes. Chapter 9, A Comparative Study of Machine Techniques, is especially valuable as an objective appraisal of what different commercial machines can and cannot accomplish.

The discussion of filing considers ease of access, maintenance, internal sorting, and merging. Of particular interest in this connection is the discussion of random access techniques. Applications in the insurance field both for life and casualty underwriters include premium billing, recording of payments, and permanent policyholder records. Applications in the accounting field have already been cited.

Planning and scheduling are discussed in mathematical terms, but the mathematics discussion is not difficult to follow. A liberal use of charts and tables aids the mathematical discussion and the narrative. The book is concluded with a discussion of automatic programming which includes routine classes, prefabricated subroutines and generators, assembly and optimizing routines, pseudo-codes, compilers, and interpreters.

Three Appendices are included: one on comparative characteristics of well-known machines, one on binary arithmetic, and one on coding of data. The book also includes 83 illustrations, 76 tables, and 52 programming problems to be written for the hypothetical machine.

In the opinion of the reviewer, this is the most substantive work on electronic data processing that has appeared to date. It is more than a manufacturer's instruction manual, more than a handbook, more than a mere collection of scholarly articles. It is the expressed

hope of the authors that this book may provide "a single work from which a reader might learn for himself the principles of the subject." While it is to be hoped that more of a "central theory of data processing" may evolve in the future, this effort certainly represents a step in the right direction.

ARTHUR E. CARLSON  
Associate Professor of Accounting  
Washington University (St. Louis)

PRICE, WATERHOUSE AND CO., *In-Line Electronic Accounting, Internal Control and Audit Trail* (New York: International Business Machines Corporation, 1958, pp. 8).

The purpose of this study is "to consider the more significant problems presented by in-line electronic accounting and to suggest means by which adequate controls may be established and suitable audit reference information provided, without unduly interfering with maximum efficiency of the operation." This study should provide a basis for each user "... to develop suitable techniques and procedures for internal control and audit trails." It should be of some assistance to accountants in the installation, operation, and audit of in-line electronic accounting systems.

J. S. L.

### Finance

GEORGE KATONA WITH THE COLLABORATION OF ALBERT LAUTERBACH AND STANLEY STEINKAMP, *Business Looks at Banks* (Ann Arbor: University of Michigan Press, 1957, pp. vii, 184, \$5.00).

*Business Looks at Banks* is another useful publication by the University of Michigan's Survey Research Center. It is based upon a nationwide sample using the depth interview technique. Some 275 large (net worth in excess of nine million dollars) and medium size (net worth between one and nine million dollars) non-financial firms were selected for the sample and 237 of these firms were interviewed. In selecting this sample the researchers state, "We decided to disregard 'smaller' firms. These firms are very numerous but their impact on economic or financial developments in the country is much smaller than their number would indicate." Herein may lie one of the major limitations of the study. While the reasoning is probably correct, to so restrict the universe of the study certainly impairs its usefulness both to bankers and businessmen. To so glibly eliminate tens of thousands of small firms that bank with thousands of "small" banks can hardly be justified. Anyone using the results of this study is cautioned against this limitation.

The report deals first with the attitude of business executives toward banks, and second, with financial practices of business firms. While few of the findings are startling, the report renders a worthwhile service in verifying and documenting attitudes and practices that most successful businessmen and bankers are already aware of.

Some of the more important findings of the study are: (1) In general business executives have favorable attitudes toward banks. (2) Greater emphasis is placed on differences of personnel of various banks than in differences in service and availability of credit. (3) Large banks have advantages over small banks because they are better equipped to offer certain services. This is especially important in foreign transactions. (4) Some executives feel that banks outside of New York have gained ground in recent years and the need to work with New York banks has been reduced. (5) When businessmen want information on banks they rely primarily on word of mouth among executives who are well informed on information sources concerning banks. A negative

attitude was expressed by many executives about calls by bank representatives. In some cases they spoke of these calls as a nuisance or a waste of time. (6) Unless the short-term interest rate is above a given level, many executives prefer to hold bank balances rather than invest in short-term funds. They feel there is a definite advantage in leaving their liquid funds on deposit. (7) The preference of many firms for bank credit over issuing common stock is pointed up. (8) Banks are uniformly criticized for not granting longer term credit. (9) The stability of banking connections of larger American firms is due largely to inertia and tradition.

The authors' statement (page 147) that "No scientific data exist about the image the general public has of banks" can hardly be said to be true. Those wishing to get such a profile are directed to *The Public's Appraisal of Banks and Banking*, An Opinion Survey for the Association of Reserve City Banks by the Opinion Research Corporation. This study is based upon a representative cross section of the voting population and 2,869 personal interviews were made as well as interviews with 357 newspaper editors and social science teachers throughout the country.

This report has many implications for both business and banking and in many areas is suggestive of further work to be done in business research. As it stands, it is a worthwhile contribution to the growing field of case studies in business behavior. Other business and professional groups—accountants, for example—might well review this study as a basis for similar studies in their respective fields.

JAMES G. RICHARDSON  
Associate Professor of Finance

University of Florida

HAROLD W. STEVENSON, *Common Stock Financing*, Michigan Business Report Number 29 (Ann Arbor: Bureau of Business Research, University of Michigan 1957, pp. vii+152, Price \$4.00).

This monograph grows out of a doctoral dissertation analyzing 116 common stock offerings in 1955. It is a useful empirical study which develops new material on factors influencing the choice between public offerings vs. privileged offerings. Privileged offerings are sales of common stock which are first offered to the present com-

mon stockholders at a price below the current market price of the stock. This material may provide a basis for improvement in the techniques and procedures of common stock offerings.

Stevenson develops a framework for attempting to describe whether a new issue will be sold by privileged subscription or by a public offering. The variables are: (1) the existence of pre-emptive rights by state law or by corporate charter, (2) the possibility of avoiding pre-emptive rights, (3) stockholder situations, (4) regulatory environment, (5) size of offerings, (6) investment banker influences and, (7) costs.

Almost all states now have cases or statutes which recognize the doctrine of pre-emptive rights. Two states (Massachusetts and New Hampshire) provide that pre-emptive rights may not be denied in company charters or articles of incorporation. In twenty-seven states statutes grant pre-emptive rights unless specifically denied in company charters. In 4 states (California, Indiana, Oklahoma, Pennsylvania) the pre-emptive right is denied unless it is specifically granted in the articles of incorporation. Where possible a company will engage in a public offering especially if the stock has been closely held and there has been a high ownership concentration.

Stevenson discusses the role of costs in determining the form of the offering. It is generally true, as his data show, that the underwriting fees and expenses involved in a privileged subscription are substantially lower than in a public offering. However, a public offering gives wider distribution to the securities sold. Thus whether a company is willing to incur the higher cost of a public flotation depends upon whether it has a need or desire for a wider distribution of its securities. In this connection Stevenson states "underpricing in a privileged offering means less proceeds per share issued and in this sense adds to the cost of a privileged offering" (page 64). Similarly he states "while lower subscription prices offer more enticement for subscriptions, they act to raise the cost of the offering" (page 66). The view that underpricing represents a cost to the issuer on a privileged subscription is erroneous. By numerical illustrations it can be shown that stockholders do not receive anything in a rights offering that they did not have be-

fore nor does the issuer give up anything. Hence, underpricing when the sale is made to the existing stockholders simply is equivalent to a stock dividend or a stock split in terms of its effect on values received by the stockholders or values given up by the issuer. Of course, if after a stock split or a stock dividend or a rights issue, the same dividend rate is maintained, this is equivalent to raising the dividend rate and benefits may accrue to the stockholders.

Stevenson finds that unsubscribed shares averaged 5.1 per cent for utility companies and 2.1 per cent for industrial companies in 1955. However, he feels that stand-by underwriting is important because investment bankers have purchased many shares through stabilizing activities. Thus even in a privileged subscription where wider distribution of shares is sought, investment bankers continue to perform a useful function.

In connection with public offerings, Stevenson observes that the offering price is determined by reference to the market price at the close of the trading day preceding the offering. This is not a fully satisfactory explanation of pricing since market prices near the date at which new issues will be offered will be greatly influenced by rumors of what the issue price is going to be. To this extent there is some circularity in using actual market price as a basis for new pricing. Better guides would be the relationship between price-earnings ratios and dividend yield ratios for this company compared with companies of similar size and activities in the industry.

Stevenson has brought together some valuable information on policies and procedures in connection with common stock financing. The material will be of special interest to accountants in connection with work which they may be called upon to perform in connection with sales of new issues of common stock. The Stevenson monograph brings together descriptive material and procedural information not easily available from other sources.

I. FRED WESTON  
Professor of Finance

Graduate School of Business Administration  
University of California  
Los Angeles 24, California

### General

PAOLO EMILIO CASSANDRO, *Le Gestioni Assicuratrici (The Administration of Insurance Companies)* (Turin, Italy: Unione Tipografico-Editrice Torinese, 1957, pp. xii, 460, Lire 4200).

This is an introductory textbook on the administration of insurance companies written expressly for accountants. It has a dual purpose: to give an insurance background on the one hand and to propose an accounting system for insurance companies on the other. This dual objective results in the division of the book into two parts.

The first part includes many topics, each of which is briefly stated. The nature of risks and the principle of insurance are explained, dwelling somewhat on the economic implications involved. A succinct historical

account follows of the evolution of the insurance idea and of the development of the insurance company in its basic structural outline. A number of administration problems are then considered. The financing of the firm, its size, and the difference between a stock company and a mutual company are discussed in turn. It is noted that insurance companies are essentially self-financed through the prepayment of premiums, posing a serious problem of investment, which is carefully controlled by the government. The gamut of insurance policies and the required reserves are mentioned, and the relationships of the insurance company to third parties are also discussed in some detail. A great deal is said about the cooperation and competition among insurance companies and the control exercised over such



companies by the government. The section is then concluded with a discussion of the internal organization of an insurance company. The principal lines of authority and responsibility and the accompanying committees and their functions are outlined and illustrated.

The second half of the book is more important and of more pertinent interest to the accountant. It deals with insurance accounting. Capital determination and inventories, budgets, accounting system, and statistical analyses of accounting data are the subjects discussed. The problem of valuation is the central theme studied under capital determination. Cost is considered the basic rule of valuation, but monetary devaluation, caused by multiple factors, has bedeviled most European economies including Italy's and has forced departures from the cost rule. Fixed assets are frequently revalued to bring them in line with the devalued currency, and investments are generally valued at the market. The departures in value from cost are separately recorded in the accounts and are so indicated on the financial statements.

Incidentally, it is noted that the safety of the principal in investments cannot always be successfully legislated, especially in countries subject to monetary devaluation. Bonds and mortgages are usually the areas designated for the investment of insurance funds, but these are the very securities which will suffer most from a monetary devaluation. In these instances real estate or common stock would be a more suitable investment.

The necessity of planning for the future is stressed. This is already inherent in the nature of insurance and all that is necessary is to extend the principle to the administrative phase of the business. Capital budgets and operating budgets are explained in some detail.

The accounting system proposed is a simple one. A series of registers and journals are suggested to record cash transactions, insurance contracts, policy and contract claims, fixed assets, investments, operating costs, and operating income. The form and content of each of these records are explained and illustrated. The ledgers are not discussed, since they would not differ materially from those of any other type of business.

Double-entry is considered to be the best accounting system for insurance companies, subject, however, to certain limitations. It should be applied only to those areas involving actual transactions and not to internal costing transactions; it should be limited to determine solely total operating results for the firm as a whole; and no attempt should be made to allocate costs to determine the net operating results by types of insurance policies. This seems to be an unwarranted restriction of the use of double-entry accounting, but the author feels that cost analyses fall more properly within the scope of statistical studies and are best made there outside of the books. Various statistical reports are suggested, including break-even cost analyses. A detailed chart of accounts is given and numerous illustrations of financial statements and schedules are shown.

The book, obviously, has been written for a limited market. It would be considered, in this country, in the nature of a handbook on insurance accounting. As such,

it serves its purpose well. It is comprehensive and clearly written. A bibliography is appended showing the sources used.

EDWARD PERAGALLO,  
Chairman, Department of Econ. & Acct'g  
College of the Holy Cross

LLOYD L. LOWENSTEIN, *Mathematics in Business* (New York: John Wiley and Sons, Inc., 1958, pp. xv, 364, Price \$4.95).

*Mathematics in Business* is obviously written by a good teacher. The sequence of topics makes excellent forward and backward integration. There is continuous use of previously learned materials, and an air of anticipation is maintained by exercises which stress gradual progression of difficulty and the introduction of coming topics before they are taken up in text discussion.

Wherever possible families of related problems are presented as a unit. The result is a strong feeling of the unity of business mathematics and the understanding that what often appears as a formidable array of separate subjects is really only a group of special applications of a few basic fundamentals.

The very essence of most problems in business finance is time and the relationships among money values through time periods. The author has developed a "time value scale," a graphic means of portraying time-value relationships—the best illustration to be found in any text in this field. It is used throughout the book, and to particular advantage in the discussions of compound interest and annuities. It is sure to become a much copied teaching aid.

Another worthy pedagogical feature of the text is the format of the chapters. Each one begins with a description of a business problem requiring solution. This is followed by a series of examples encompassing the basic mathematics of the problem. From these examples the standard formula for that type of problem is derived, and a series of exercises are presented in which the formula is applied. Having thus developed a standard formula for a basic problem type, variations are introduced through further examples and exercises.

In spite of the good educational qualities of style and format, there are several shortcomings, all of which stem from one major defect. Whereas most texts in business mathematics correctly assume that a college student should have a working knowledge of arithmetic and elementary algebra, this one literally assumes that college students can't even add or subtract. Thus, instead of devoting all of his 300 pages to the development of business mathematics, the author uses about one-third of the space for remedial arithmetic which has two bad effects.

First, this material is so elementary as to offend the intelligence of all but the poorest of students. It is riddled with such problem situations as: "When Johnny's mother sends him to Mrs. Pennyfeather's dry goods shop . . ."; "If a dozen apples cost 43 cents we find the cost per apple by division."; and "One dollar and 6 cents is divided between Jack and Jill. . . ." This is an unfortunate capitulation. If we must admit to our colleges students with high school, and even grade



school, deficiencies, let's not give them remedial work for college credit.

Second, and equally serious, so much space devoted to arithmetic forces the author to abbreviate the remainder of the topics. For example, there are four pages of simple addition exercises. This is as much space as is given to amortization and sinking funds combined, and almost as much as is used to treat the complete subject of bonds. Consequently the derivation of basic formulas and the discussion of the business setting for these formulas is frequently far too brief. Finally, the whole subject of insurance and the mathematics of expectations, including mortality tables, is omitted.

The appendix includes the usual reference tables on logarithms, compound interest, and annuities. However, these tables also are lacking in detail, and, therefore are less desirable for reference purposes.

It is hoped that this text will be revised. If the remedial work is removed and the remaining subject areas filled out and elaborated, it could easily become one of the better books in the field.

PAUL G. CRAIG

Associate Professor of Economics

Ohio State University

CHARLES W. SMITH, *Targeting Sales Effort* (New York: Columbia University Press, 1958, pp. 369, Price \$15.00).

*Targeting Sales Effort* introduces a new tool for obtaining information about where people buy. It explains a new method that can be used to determine the structure of the distribution system based on analysis of available sales and market potential information on a trading center which should result in a more effective sales effort. The constant change in the structure of the national market creates problems and opportunities for business enterprise. Management needs to know where people purchase their requirements in order to make decisions regarding the geographic allocation of direct selling and advertising effort as well as where to locate manufacturing and storage facilities. This book provides information coded by cities, counties, and trading centers. It illustrates how the new method works in detail and how it is applied to specific problems encountered by marketing and sales executives.

*Targeting Sales Effort* contains much statistical information which should be useful to accountants in their analysis and managerial functions.

J. S. L.

## Taxes

DANIEL M. HOLLAND, *The Income-Tax Burden on Stockholders* (Princeton, N. J.: Princeton University Press, 1958, pp. xxv, 241, \$5.00).

For a number of years the effect of the Federal income tax upon corporate earnings coupled with the personal income tax upon distributed corporation earnings has been the subject of disagreement. Some have contended that the system of taxation results in heavy "double taxation." On the other hand it has been contended that rich corporate owners could avoid tax and thus lower their tax burden through the retention of earnings. The author of this work has attempted to analyze and assess the evidence which bears on this disagreement.

Because the conclusions to be drawn from the quantitative evidence available will vary considerably with the basic assumptions upon which the analysis rests, the author gives a careful explanation of the framework of concepts underlying his study in the opening section of the book. A complete outline of the procedures to be followed is presented also at this point. In order to have a basis for measuring the effect of the combined corporate and personal income tax burden currently falling upon stockholders, a comparison is made between the total tax burden to the stockholder under our current system and the burden that would result if corporate incomes were taxed to the stockholder as partnership incomes are now taxed. In all of this the author assumes that the incidence of corporate income taxes is not shifted but, based upon income, reduces the corporate income which may be distributed and thus falls directly upon the stockholder.

In a later section the author analyzes the data for 1950, taken as a representative year, in great detail in-

dicating the relative effect of the two alternative procedures in terms of differential income taxes. He presents, in summary form, the changes in the differential tax burden for the period 1940-1952.

Another section explains alternative measures of the differential tax burden which have been suggested by other students of the subject. He relates the results under these alternatives to the results obtained by the measures used in his study. This is followed by a discussion of the progressivity effect of the differential taxes and an analysis of the relief provisions of the Internal Revenue Code of 1954.

The summary of findings attempts to answer the two questions posed at the beginning of the study: "How heavy has been the extra tax burden on stockholders' pro rata share of corporate earnings? How heavy has been the extra tax burden, measured in terms of effective rates on all stockholders' income, compared with that of other taxpayers?" The answer to the first question was determined in terms of the two segments of corporate earnings—earnings for distribution and earnings for retention and then for net corporate earnings. For the period studied "over most of the income scale the net corporate earnings component of stockholders' income was overtaxed." Yet "in most years and for stockholders in the upper reaches of the income scale, undertaxation was the result" (p. 191). The answer to the second question was similar except that the value of the differential was lower. "In all years covered, over most of the income range, stockholders were subject to a significantly higher rate of income taxation than would have applied if all their income including their full pro rata share of net corporate earnings had been subject to the personal income tax alone. For stockholders near

the top of the income array, however, the outcome was reversed . . ." (p. 191). Much of the effect, of course, depends upon the level of the individual stockholder's other personal income or the extent to which his total personal income consists of corporate earnings.

Throughout the study the author is aware of the effect upon his conclusions of the statistical methods used and the estimation involved in the figures for

some years. He has made a difficult statistical analysis clear for the lay reader, handling the many variables in a direct and concise manner. The study is to be recommended as a revealing and thought provoking work on a highly controversial subject.

GLEN G. YANKEE  
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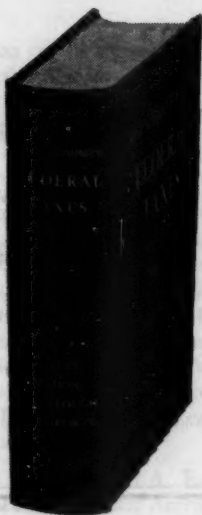
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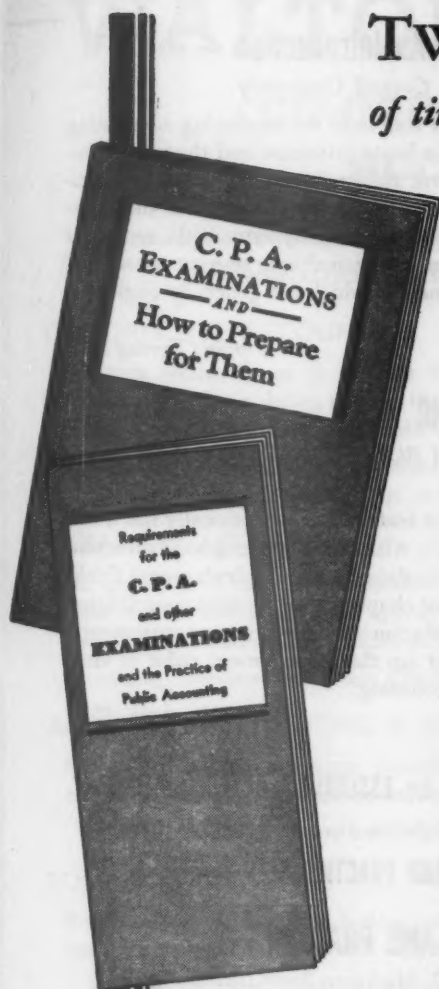
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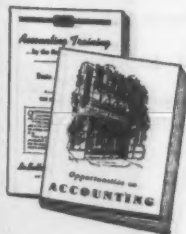
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